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No. 10.

DIFFERENTIAL DIAGNOSIS IN ABDOMINAL LESIONS.

By **W. J. Stewart McKay, M.B., B.Sc., M.Ch.,**
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Every week, and during some months of the year, every day, a patient presents himself or herself at my rooms, who has abdominal symptoms which are not sufficiently definite to enable one to say with certainty whether the lesion is located in the stomach, pancreas, duodenum, gall-bladder, kidney, ureter, appendix, ovary, or Fallopian tube, consequently a differential diagnosis becomes necessary. Therefore, I propose in this paper to give a few of the conclusions that I have arrived at after performing a thousand operations on such cases, in the hope that some of the conclusions may be of help to those who encounter such cases less often. I have not included in this survey the hundreds of obvious cases of appendicitis, about which there can be no reasonable doubt as regards the diagnosis in the mind of the surgeon. I am specially concerned with those cases, in which, despite over 25 years of abdominal work, I still find at times a great difficulty in coming to an absolute diagnosis before the operation is performed. I was consoled to know, when at the Mayo Clinic nine years ago, that there they admitted to at least 10 per cent. of mistakes in such cases: they probably come to more accurate conclusions now.

Let me begin by taking a very common type of case. The patient is a woman from the country; she is thin, with a yellow skin, and says that she has suffered from indigestion for years; she drinks tea three times a day; she suffers from constipation; she has headaches, and once a month the headaches become very bad, and she vomits bile for a day or two; she alludes to these attacks, as "bilious attacks." Lately she has had some severe pains in the epigastric region, and has vomited, after eating some unusual food, such as oysters. Her medical man, on seeing her during the attack, told her she had gastritis. She was troubled with the pains off and on for a week; she then got well. But a few weeks later, she had a similar attack, and yet, she says, she had been most careful with her diet. After the second attack she became quite yellow, and then her medical man said that he was sure she had gall stones.

A history, such as the above, is not definite; but when one sees many cases with a similar history one begins to include and exclude certain lesions. The first lesion that I have for some years excluded is duodenal ulcer.

When Moynihan brought out his work on "Duodenal Ulcer," I became so impressed with the frequency of this kind of ulcer, that I diagnosed it continually; but as years passed by, and I found that duodenal ulcer was a *rara avis* in my own prac-

tice, I ceased to trouble about it. This, of course, is not the experience of every surgeon, but as I see and operate on more women than men, it has been my experience, although I open the abdomen on every day of the week, except Sunday, that I rarely see a duodenal ulcer. Men, whisky, and duodenal ulcers may have some relation: women, and tea, and gall stones I know have.

Quite recently, while writing this paper, I thought I had an instance of this form of ulcer. A man was brought to the Lewisham Hospital late one night; he had great pain in the epigastric region, and vomited blood, and he had black stools. My House Surgeon diagnosed a duodenal ulcer, and I operated. On pulling the pylorus down, I found that he had a large mass closely connecting the posterior wall of the pylorus with the liver. It was not a duodenal ulcer; it was a gastric ulcer, and the mass extended to within one and a quarter centimetres (half an inch) of the veins that indicate the pyloric sphincter. I performed a gastro-enterostomy and the patient gained pounds in weight very soon. In a case like this, the abdomen, if opened up a month later, would show that much of the mass had disappeared.

Let us return to our country patient. I have just remarked that I do not worry now about duodenal ulcers like I used to once; I meet them from time to time, but I find that their diagnosis may be left to the consultant physician who never sees the abdomen opened. My first thought now always is:—Has this patient an appendix condition which causes her symptoms? This, in my opinion, is the first question that one must ask, just as a physician, when called to a case with a sudden high temperature, and an illness of short duration, should always ask himself: "Is this influenza?"

When the patient says, "My doctor said I had gastritis," I always say to myself, "A hundred to one against it." My reason for this remark is that medical men will persist in making a diagnosis from a single symptom; and a great many mistakes are made in abdominal cases when, through a superficial, rapid, and erroneous diagnosis, "gastritis" is announced as the affection, chiefly because the patient happens to complain of pain in the epigastric region and has vomited. That is quite enough for the verdict "You have gastritis, you have been eating something that has disagreed with you!" And so in hundreds, and I go further and say, in thousands of cases appendicitis is overlooked, because a single prominent symptom is seized upon, and the cause of the symptom is not suspected, and therefore overlooked.

Now I do not want to say that the country practitioners are the only ones who make these mistakes. That would be most unjust. In our large cities there are hundreds of children who are said to be suffering from chronic gastritis, but who are, in reality,

the victims of chronic appendicitis, and yet the condition is often never suspected by the medical attendant.

Therefore the first lesson that my operative experience has taught me is, that if a medical man is called to see a patient who is vomiting, and has pains in the epigastric region, let him think twice before he makes the diagnosis "gastritis!"

Now, if the case that we are dealing with is not a case of appendicitis, what may it be? If it be in a woman, the two things that I first think of are, gastric ulcer and gall stones. Personally, I find that gall stones occur much more frequently in women in Australia than gastric ulcer; and that they are much more frequent in women than in men. In fact, it is quite surprising how often one finds gall stones present in women who never have had any painful symptoms. I do not think I exaggerate when I say that 7% of Australian women have gall stones; yet they often have no symptoms to indicate their disorder.

I once operated on an old lady of 70 years who had a gall bladder filled with more than 700 gall stones, and she told me that she never had had the slightest trouble from them until a few weeks before the operation. The explanation was to be found in the fact that a large smooth stone obstructed the first part of the cystic duct, and this had prevented any of the smaller stones escaping. There was no bile present in the gall-bladder, which was simply packed with stones of all sizes and shapes. How they had formed was indeed a mystery. I think it possible that gall stones may be governed in their formation and growth by some of the laws which play a part in the formation and growth of crystals.

If one tries to differentiate between appendicitis, gall stones, and gastric ulcer, one favours the appendix, and then the gall-bladder; one thinks of the ulcer last. We, of course, always get great help from a consideration of the condition of the patient. We find gall stones in full-blooded women and men, while we look for gastric ulcer in the thin and miserable. This thin, sallow-complexioned kind of man or woman often has gall stones, and may have unbearable indigestion, and it is in such cases that we are forced to think of stomach ulcers and growths. Many of the miserable women in the world who haunt medical men's rooms, and are treated for gastric ulcer, have no ulcers, but they have a condition of gastroptosis.

Now, my second warning is: When a miserable, thin, emaciated female gives you as part of her history, the fact that she vomits her food, and that she has lost pounds in weight, do not think of duodenal or gastric ulcer, or pyloric cancer, but think of gastrocoloptosis. These cases are far more frequent than the literature of the subject indicates. Unfortunately, such cases are often operated on, and no ulcer is found, but gastro-enterostomy is performed, and the patient haunts your rooms for years, as she is no better. If you had recognized that all you had to do was to attack the atonic stomach, and sew the pylorus up to the ligament of the liver, close to the end of the sternum, what a different result would have fol-

lowed! If anyone wants to make a study of gastrocoloptosis, let him read the convincing work of Thor-kild Rovsing, and he will wonder how he could have missed so many examples of this condition.

I have said above that I have found gall stones more often in women than in men, and no age appears to be exempt. I once refused to believe that a fine, healthy girl of 16, who was sent to me from the country, had gall stones, because she was so young, strong and healthy looking, but when I operated on her and found 45 good-sized gall stones present, I was truly amazed.

Next we come to a condition which is certainly neglected in differential diagnosis of abdominal conditions. I could put my hand at present on at least 20 patients who illustrate this condition. Most of these patients are men, some quite young, others as old as 50 years.

When one of these men presents himself, he gives the history of epigastric pain, and one diagnoses either gall stones or duodenal ulcer. In one case, the man being a personal friend of mine, I was absolutely certain he had a duodenal ulcer. Moynihan's book had just appeared, and I took the trouble to copy out every symptom Moynihan mentioned in the diagnosis of duodenal ulcer, and the patient's answers corresponded exactly with the symptoms of duodenal ulcer. I invited the patient's medical man, who was his personal friend, and looked after him during ten years of attacks, to come and see the operation; and I opened the abdomen without a doubt in my mind. When I brought the duodenum up into view it was as healthy as possible; it did not even have the veil of blood vessels on it that we so often see on the colon, caecum, and the kidney, when they have been congested for a length of time. This man had no gastric ulcer; he had no gall stones; he had no duodenal ulcer. So there was nothing left but to retreat to his appendix, and this was found to be bound down with a mass of extensive adhesions. His medical man, looking on, remarked that he had never known the patient to complain of any pain about the appendix region, and he could hardly believe his eyes when he saw all the adhesions. The patient recovered, and I thought no more of his case; but he returned in a few months with the same old pains that he had suffered from for ten years. This case puzzled me for many years. Slowly I unravelled the mystery. That man had, and has to this day, chronic pancreatitis. It was William Mayo who first directed my attention to such cases, and he told me that he believed that the trouble began first of all in the appendix, then went on to the gall-bladder, and after that the pancreas became affected. I followed out his teaching in quite a number of cases, and as he now considers the draining of the gall bladder is not sufficient, I have removed the gall bladder, as he directs, and in some instances with brilliantly successful results. Alas! in some cases the patient has not shown the slightest improvement. One young man of splendid physique, whose appendix I removed a few years ago, continued to have these attacks of pain—and I might here remark, the pain during the attack appears to strike from the region of the left nipple down towards the gall-bladder. He came over recently from Tasmania,

and I advised him to have his gall bladder removed, and he consented, but his medical man tells me that he is no better, and that he still continues to have attacks of pain.

I have been accustomed for some years, when possible, during an abdominal section, to examine the gall bladder and the pancreas, and when the patient is suffering from what I consider to be chronic pancreatitis, he always has a pancreas which is hard, and feels as though it were divided into small cubes, in marked contrast to the soft, even feeling of the normal organ. I check my own observations by asking the Sister who always assists me at the Lewisham Hospital to feel the pancreas and tell me what she considers the condition of the organ to be. I am convinced that many of the patients who are seized with sudden pain in the epigastric region, many months or years after the appendix and gall bladder have been removed, are suffering from pancreatic disorder. I would, therefore, give as my third warning: "Keep the pancreas in view, and let it come into the differential diagnosis more often than it does at present in cases where the pain is in the epigastrium."

I now come to another condition which is fairly common, and yet which appears to have escaped the notice of many surgeons, for I never meet one who is fully seized with the importance of the treatment of this condition after the removal of the appendix. The condition is infection of the intestinal glands by the tubercle bacillus. The cases that I have operated on with this infection have always been in children and young people up to the age of twenty years; but quite recently I have operated on one, a woman of forty-five, with many infected glands. The patients are usually thin and miserable, having a tendency to pot-belly. They give such a history that one would immediately say, "Oh, this is chronic appendicitis"; but in many of the cases one observes that there is often very severe pain without any fever. The patients always have indigestion; they have no appetite; they are peevish; they have a bad colour, and they may have lanugo on their back and arms. On opening the abdomen, the first thing that one should do is to feel if there are any enlargements of the lymphatic glands about the branches of the ileo-colic artery, and the glands that lie about the right colic artery. No doubt, many operators regard the enlargement of the glands about the ileum and colon as the result of the inflammation of the appendix. Accordingly, they remove the appendix and think that they have nothing more to do; but the child makes little progress, unless a definite after-treatment is followed. Now, this is where the importance of my own observations comes in. The removal of the appendix is not sufficient in these cases. After the operation the patient must have a course of tuberculin injections. So marvellous is the effect of tuberculin in these cases that I have known patients put on as much as thirteen and three-quarter kilograms (twenty-eight pounds) in weight in six weeks. After operating in one of my early cases I sent a lad home, not being fully seized with the condition I was dealing with, and he did not gain a pound in weight. Later on, when I discovered what was the proper line of treatment, I sent for this lad, and he gained over 13.7 kilograms (two

stones) in three months after the tuberculin was injected. Dr. Mary Burfitt, the Pathologist at the Lewisham Hospital, always takes charge of these cases and administers the tuberculin, and she has treated a couple of dozen cases during the last three years for me, and she is as firmly convinced as I am of the marvellous efficacy of tuberculin in such cases. I venture to suggest that these cases are instances of infection of intestinal glands, caused by milk which has been obtained from tubercular cows.

Quite recently, a young man, aged twenty, was sent to me from Wollongong. He was very jaundiced, and had had severe pains about his gall bladder and his appendix. I told him that I considered that he had appendicitis, and probably tubercular glands in the abdomen. His medical attendant had assured him that he had gall stones. The young man was not satisfied with my diagnosis, and visited a well-known surgeon in Macquarie Street, who assured him he had gall stones. The young man returned me, and I performed a section on him. He had no gall stones; he had appendicitis and many hundreds of tubercular glands. I removed his appendix, and Miss Burfitt injected tuberculin, and he gained over 13.7 kilograms (two stones) in two months.

While on the subject I might allude to two cases of tubercular diseases of the caecum in which I operated, after having made a diagnosis of appendicitis. A mass was found round the caecum, and the appendix was buried in adhesions. In both cases I removed the appendix. One patient, a young lad who was jaundiced at the time of the operation, continued to bleed from the bowels for twelve months, and I handed him over to Dr. Scot-Skirving, and asked him to treat him. This was about fifteen years ago, and I did not then know the virtues of tuberculin in these cases. Dr. Scot-Skirving reported to me in twelve months, and said that the boy was no better, and that he could not stop the bleeding. I then asked Dr. Barling to inject tuberculin. In two months the bleeding had stopped, the boy became fat and strong, and is now a medical man, and has never had any bleeding from that day to this.

In another case after I had opened the abdomen, I found a large mass about the caecum. I removed the appendix; and the operation was followed by the formation of a faecal fistula. This was a case of tubercle of the caecum. I also treated this patient with tuberculin. In three months' time the woman recovered, the mass vanished, she married, and is now the mother of a large family. Whatever tuberculin may do for other parts of the body, I am perfectly convinced that it has a most excellent effect on the tubercular glands connected with the intestines, and in tubercular affections of the caecum.

I have seen quite a number of children, who have been treated for months, and sometimes for years by a physician, and the parents will tell you that the doctor says that the children have marasmus. These poor little creatures are always miserable and pot-bellied, and they cry, and fret, and never enjoy a meal. If you are called in consultation to see one of these children, you are told by the attendant phy-

sician that the stomach is so distended that the walls cannot expel the food, and so the child is pot-bellied. They are treated with all sorts of patent foods, goat's milk, and other modern methods that have been invented for feeding children. I always advise that their appendix be removed, and I have had the gratification of seeing many of these poor children immediately improve. I do not know why the removal of their appendix should act so quickly on their whole system, but the fact remains that the removal of the appendix is very often the key to their regeneration.

Let me now turn to cases of calculus of the kidney and ureter, and try and see how such cases can be mistaken for appendicitis, and even for gall stones. While writing this paper I have had the privilege of making some observations on myself, and although I suffered much pain, I have the satisfaction of being able to give an account of how a calculus passing along the ureter on the right side, may be mistaken for appendicitis. When the stone starts from the kidney, pains begin, and begin very quickly. A day or two before there may be some smoky urine voided, but once the stone enters the ureter, the urine becomes clear. I always had an idea that when the stone was passing down the ureter the urine had to be voided frequently. This, however, I found to be a mistake. If the stone is not too large, it travels to the brim of the pelvis, and for about four or five hours the pain is very great. During the first part of its journey the patient wants to lie on the right side. If he lies on his back, the pain is increased. If he lies on his left side, the pain is still greater. The patient finds that if he can turn on to his right side, and press that side into a hot-water bottle, that he gets some measure of relief. When the stone arrives at the brim of the pelvis, it rests there not infrequently, and may remain there for some days, during which time it gives rise to excruciating pain at intervals. At times it appears not to be able to get over the blood vessels, and the mere fact of it trying to cross the iliac vessels causes the iliac artery to pulsate strongly, and this makes the agony increase very much. It is when the stone is at the brim of the pelvis that certain symptoms are produced that cause the case to resemble appendicitis. In the first place the ascending colon becomes distended with wind, and this in itself causes considerable pain. The wind travels along the transverse colon, and the stomach becomes irritated, and we have distension, pain, and dry retching. If then a physician is called in to see such a case at this stage, it may be very difficult for him to distinguish between stone in the ureter, and an appendicitis attack. There is pain on pressure over the caecum, and there is pain on pressure on the ascending colon, which is distended with wind, and there is vomiting at periods, or dry retching, and an increased pulse rate. Lying in bed during some days of my own attack, knowing that I had a calculus stuck at the pelvic brim, I could hardly convince myself at the time that I had not also a concurrent attack of appendicitis, and I cannot see how a medical man called in to see a patient in such a condition could always be quite certain of his diagnosis. It may be argued that the X-rays would tell him and

show the stone. Unfortunately in my case, the stones proved, on analysis by Professor Chapman, to be pure uric acid, and no shadow whatever could be obtained. When a stone leaves the brim and travels towards the bladder, the pain is not intense, but the feeling of nausea continues and the caecum becomes distended. Looking back into the past, I now can understand how I failed to cure some cases from which I had removed the appendix. Two of my patients, even while they were in bed after the operation, had severe attacks of colic, yet the X-rays showed nothing. However, in two cases at a later date I was able to obtain a very clear picture of the stone stuck in the lower part of the ureter, in one case on the right side, and in the other case in the left side.

The lesson I have learned from the above is that you must not jump to the conclusion that the patient who is subject to what appears obvious renal colic, is not a calculus case, because the X-rays picture is negative; and the second lesson is that some cases of stone in the ureter are diagnosed as cases of appendicitis, and a normal appendix is removed. Then the calculus passes away, and no one is any the wiser; but the symptoms were due to the stone, not to the appendix.

While on the subject of appendicitis, I want to draw attention to a mistake I have seen made in quite a number of cases. I will illustrate this by the case of a woman who was treated in the country for six weeks for cystitis. She had no pain near the appendix, but she wanted to pass her water every few minutes. The bladder had been washed out every day, but still the patient did not improve. She then came to Sydney, and I was asked to see her. The patient's urine had been sent to Sydney on two different occasions to be tested, and she showed me the two reports, but as there was nothing in them to guide me, I ventured the opinion that if the urine had been examined during the first weeks of the illness that the colon bacillus might have been found in it. The patient immediately said: "I believe there was an earlier report," and when this was found I read that the examination had been made by Dr. Finekh, and the report disclosed the fact that the urine contained many colon bacilli. On reading the report I told the patient that I believed her trouble was due to appendicitis, and advised the removal of the appendix. She consented, and the bladder irritability disappeared the day after she was operated on, and never returned. In some of these cases not only is there painful micturition, but there is pus in the water; but I do not know whether the colon bacilli is always present. I think that the inflammation in the appendix irritates the ureter and causes the bladder trouble, and in some cases the slight trace of pus in the urine is probably due to the irritated ureter.

Appendicitis has to be distinguished from ruptured tubal pregnancy, and this is not always so easy to do as one would think. The following case illustrates this. A woman was sent to me from the country, and her medical attendant wrote and said that she had had a miscarriage, and that he had curetted

her, but he now thought she was suffering from appendicitis.

Her history revealed the fact that she had visited Sydney a month previous, and on returning to her country town she had had menorrhagia. As she had not had any periods for two months previous to this, the local practitioner said that he thought that she was about to abort. She bled on, and after two weeks was curetted. After the curettage she bled still more, and had great pain in her right side, and she was so ill that the country medico sent her to me, saying that he believed that she had acute appendicitis. After taking her history I was not satisfied, and examined her under an anæsthetic, and then opened her abdomen, feeling sure that she had a ruptured tubal pregnancy on the right side. This proved to be true, and she also had appendicitis; her appendix had taken on a sub-acute inflammation. What had happened in this case was this. The woman had not been pregnant. She stated that she had missed two periods and then had a sudden fall. This caused menorrhagia, and made her local doctor think that she was going to miscarry. He curetted her, and the curettage caused the tube to rupture, and the feeling of tenderness on the right side and a swelling made him think that she had some septic trouble on that side of the uterus; so he was glad to hand her on to me as an "appendicitis."

There is another condition which is very common, and which is often diagnosed as appendicitis, but which is a condition of chronic inflammation of the right ovary. I saw Howard Kelly make a mistake in such a case when operating on the daughter of a medical man. The condition that I refer to is so common in Australia, that it has been the cause of thousands of mistakes, the patients being curetted because they suffer from dysmenorrhœa. The patient may be 18 years of age, or 30, and she tells you that she has always had pain at her monthly periods. If she is 30 years of age, she will tell you that the pain, instead of being at the time of the period, always begins a week before. When you examine the ovaries in such a case you find that instead of a thin, delicate, *tunica albuginea*, this has become very thick and rugged, a condition which I am accustomed to describe as "corns on the ovary," for it takes an exceedingly sharp knife to cut the tissues of the periphery of such an ovary. Between this thick layer and the medullary substance a cortical zone is found as in the normal ovary, and as the tunica is no longer a delicate structure, but has increased from 0.025 to 0.3 cm. ($\frac{1}{100}$ to $\frac{1}{8}$ inch) in thickness, the Graafian follicles which lie near the cortical layer can no longer burst through, and the ovary is studded with small cysts.

Six or seven days before the menstrual period pain sets in, and later on the patient has dysmenorrhœa. This is often treated by dilatation and curettage of the uterus, another brilliant example of how the symptom, and not the disease, is treated. Because the pain is on the right side—it may be on both sides—and begins between the monthly periods, this is regarded as quite sufficient to prove that its origin is not ovarian, and that it is due to appendi-

citis. The appendix is removed and the patient still suffers.

The above examples are but a few of the many that one may bring forth to show how careful one must be in endeavouring to decide whether the lesion which gives rise to pain on the right of the umbilicus is due to an affection which is situated in the stomach, pancreas, gall-bladder, ureter, appendix, ovary or Fallopian tube.

I would strongly recommend every young surgeon to read the classical work of Mackenzie on "Symptoms and their Interpretations"; the perusal of this work cannot fail to impress him, and guide him in his methods of diagnosis.

Post-scriptum.—I wrote this paper over six months ago and then put it aside to check what I had written by further operative experiences. I do not wish to alter anything I have written, but I wish to say that my further observations on "dropped stomach" in thin women has abundantly confirmed what I have written above, and I am quite satisfied that after removing the appendix in these patients the stomach should be fixed by silk to the ligament of the liver, if it is found that the lower border of the stomach is two and a half centimetres (one inch) or more behind the umbilicus.

Reviews.

RADIOGRAPHY.

Part I. of Robert Knox's "Radiography and Radiotherapeutics" 1917 edition is devoted entirely to radiography. The 1915 edition of this work was the first good English textbook on this intricate subject, and the extensive demand for it prompted the present greatly enlarged edition.¹ The printing, plates and illustrations are excellent and the various subjects are well arranged.

The first portion of the book is devoted to apparatus and all classes of outfits are intelligibly described. Hospital committees contemplating the purchase of X-ray installations would do well to study this portion thoroughly.

The addition of a chapter on the electro-physics of radiography is worthy of note, and the hints on defective working of apparatus should prove most useful. More space is given to the discussion of interrupter-less transformers and instantaneous radiography, and the Coolidge tube is described in detail, together with its control apparatus. The early promise of the success of this tube has been verified, yet once again a caution is added as to the dangers to the operator in using it. The section on reverse current is ably dealt with and the various methods of connexion of valve tubes is shown in clear diagrams.

Military installations are given prominence and the utility of large travelling outfits, which may serve five or six small hospitals, is pointed out. Outfits of this kind economize the services of trained radiologists. They therefore render unnecessary an extra staff which is required in hospitals containing their own radiographic department.

The milliamperè-second technique for coil outfits is recommended, and Kuegle's excellent method is advocated in the chapter on transformer exposures. We can thoroughly recommend these two methods as being accurate and reliable.

Knox also gives the first intelligible description of stereoscopic radiography which we have seen published; this chapter will be read eagerly by radiologists.

Naturally much space is devoted to the question of localization of foreign bodies, and we are glad to see that the simpler "triangulation" methods, with or without stereoscopy, are advocated. The simple and accurate "caliper" localization, as adopted by the United States of America

¹ The Edinburgh Medical Series (General Editor, John D. Comrie, B.Sc., M.D., F.R.C.P.E.; Radiography and Radiotherapeutics, Part I., Radiography, by Robert Knox, M.D., M.B.C.S., L.R.C.P.; 1917; London: A. & C. Black, Limited. Royal 8vo., pp. 383, with 78 plates and 337 illustrations in the text. Price, 30s. net.

Medical Service, is not described. Dr. Sweet's methods of localizing foreign bodies in the eye are recommended.

The war surgery section is new, and in it gunshot fractures and gas gangrene are dealt with. Numerous fine skiagrams are reproduced in this section.

Before discussing the pathological condition of the bones and joints, the author describes and illustrates their normal appearances. He then treats the various pathological states. These should prove most valuable for reference. An excellent skull technique is given and can be recommended for general adoption.

For chest and abdominal radiography, Knox rightly insists on the close co-operation of radiologist and clinician, if the best results are to be obtained. Bismuth and barium technique are well described; the various investigations are explained in detail. On the other hand, the section on duodenal ulcer is disappointing, especially when compared with the published work of Carman, Case and Cole, of America.

We are also surprised that Knox still advocates radiocopy as a preliminary to radiography of the renal tract.

Pyelography is only lightly touched on. The author mentions two substances, collargol and thorium nitrate, for use in this connexion. The dangers of these substances are set out, but no mention is made of the harmless emulsion of silver iodide, which is largely used in America, and which is employed almost exclusively in Australia.

ELECTRODIAGNOSIS IN WAR.

There are books on medical electricity in English which contain much of the information given in this little work of Drs. Zimmern and Perol,¹ but we know of none which deals with diagnosis alone, nor of any based on such an enormous experience gained from the war. The chapter on voltaic vertigo—a test for labyrinthine disturbance—is specially instructive, and it is interesting to read that in the French Army Medical Corps, electrodiagnosis is regarded as of such importance that no neurological case is considered complete without a report on the electrical examination.

Messrs. Melville and Mullen, of Melbourne, have now in the press a book entitled "The Psychological Function of the Cerebellum," by Dr. I. Silverman. The author claims that he has been able to prove by inductive reasoning that the cerebellum is the seat of the emotions and of the moral sense. His programme consists in a record of observations and of facts, inferences drawn from these facts and a comparison of his conclusions with experience. The matter is presented under the headings of (1) Psychology, (2) Physiology, (3) The Analogy, (4) The Logic Underlying the Analogy, and (5) Confirmatory. He recognizes that his theory must be either right or wrong, and throws out a challenge to his critics to demonstrate any fundamental error. The book will be reviewed in these columns soon after its publication.

REGULATIONS UNDER THE PUBLIC HEALTH ACT, 1903, TASMANIA.

In the *Tasmanian Government Gazette*, of February 26, 1918, the text of the regulations governing the measures to be adopted for the prevention of the spread of infective diseases, is published.

An Inspector is required to visit all premises at least once in each six months and to report to the local authority and to the Chief Health Officer if there have been any breaches of the Act or of the regulations. The occupier of premises may be required by the Inspector to cleanse and disinfect the premises. After a case of infective disease has been notified, the officer of health or an inspector is required to visit the premises and to make enquiries as to the mode of contraction of infection, the means taken for the prevention of its spread and other circumstances in connexion with the occurrence of the infection.

The officer of health may order the isolation of any patient suffering from infectious disease in a special hospital. He may, however, give a certificate that home isolation and

treatment may be safely permitted, or that the patient is too ill to be removed. Provision is made for the declaration that any house or premises in which a case of infective disease has occurred, is infected. In this case no person will be allowed to enter or leave the house without consent in writing from the health officer. The Chief Health Officer or any officer of health or medical practitioner authorized by him, may enter any house and examine bacteriologically or otherwise any inmate, for the purpose of ascertaining whether he is suffering from an infectious disease or is the medium for the transmission of an infectious disease. All "carriers" and "contacts" are liable to isolation or to report themselves, and to submit to such medical examination as may be prescribed. Any person who has been certified by a medical practitioner to be a "carrier," and is held to be likely to spread infection, may be removed to an isolation hospital.

Regulations 9, 10 and 11 empower the health authority to carry out disinfection of persons, clothing and effects and of premises.

No person who has been certified in writing by a medical practitioner to be a carrier of the causal organism of diphtheria, meningitis or infantile paralysis, shall visit any public meeting, place of public entertainment or amusement, assembly, church or school, or enter or travel by any railway train or public vehicle or any vessel which carries passengers. Any person who has been certified to be a carrier of the bacillus of typhoid fever may be required to register his name, address and occupation at the office of the Chief Health Officer. The medical officer in charge of a patient suffering from enteric fever is required to submit for bacteriological examination a specimen of faeces and of urine before the patient may be discharged from the hospital or may be liberated from medical treatment. All persons suffering from diphtheria are to be kept in isolation until two consecutive examinations, taken at intervals of not less than 24 hours, fail to reveal diphtheria bacilli in the mucus of the throat or nose. The cost of antitoxin applied to contacts for the prevention of infection, is to be borne by the local authority.

Regulation 18 provides for the safe burial or cremation of persons who have died from infectious disease, and regulation 19 prohibits the sale or gift of clothing or bedding from any house in which an infectious disease is present until satisfactory disinfection has been carried out.

When an infectious disease occurs in the premises of any cow-keeper, dairyman or seller of milk, or of any person concerned in the preparation or sale of any article of food or drink, the local authority may be required to prohibit the sale of the milk, food or drink, until the infection no longer exists. No "carrier" or "contact" is allowed to milk cows or to handle vessels for containing milk intended for sale or take part in the preparation or sale of any article of food or drink. No employer is allowed to permit a "carrier" or "contact" to milk cows or to handle food, etc.

The local authority is required to provide special closets pans for the exclusive use of persons suffering from enteric fever. These pans shall be provided with air-tight lids, and the local authority is required to supply a suitable disinfectant with the pans.

No book from any library may be lent to persons suffering from an infectious disease, and if any person residing in a house in which another person is suffering from an infectious disease, has in his possession a book from a lending library, the book must be disinfected before it is returned. The Chief Health Officer may order the destruction of any infected animal, and owners, tenants or occupiers of premises are required to destroy all rats, mice or insects by the method directed or approved by the Chief Health Officer. Occupiers of premises are required to take measures for the destruction of flies, when an infectious disease occurs in the premises. The Chief Health Officer may call upon an owner, tenant or occupier of premises to undertake such structural and other alterations as may be necessary to render the premises sanitary and to prevent them from being accessible to rats, mice or insects. No person is permitted to spit on any footpath in any public conveyance, in any public hall, waiting-room, building or place or entertainment.

The penalty for breaches of these regulations is a fine of not exceeding £20.

¹ *Electrodiagnostic de Guerre*, by A. Zimmern and P. Perol. Masson et Cie, Paris; 1917. Durey 3vo., pp. 154. Price, 4fr.

The Medical Journal of Australia.

SATURDAY, MARCH 9, 1918.

Uniform Medical Registration.

The Federal Committee have again concerned themselves with the question of uniformity in medical registration throughout the Commonwealth. The matter has been taken a stage onwards and during the next six months the several Branches of the British Medical Association in Australia will have opportunities for formulating their views on the subject. There does not appear to be any difference of opinion concerning the advisability of having Federal registration rather than State registration. It is generally recognized that if a stringent Federal act could be obtained, the interests of the profession and those of the community would be served. Medical registration has been devised as a protection of the public against untrained and unscrupulous persons undertaking medical practice. The fact that rigid tests are applied before registration is, or rather should be, granted, guarantees that registered medical practitioners possess a reasonable amount of knowledge. The power of a Medical Board to remove the name of a practitioner who has been guilty of infamous conduct in a professional respect, means that the public is protected against imposing trust in a man who is capable of abusing that trust. We have already pointed out in these columns that some of the Medical Acts in Australia do not provide this protection. It therefore becomes necessary for the defective Acts to be amended to bring them up to the standard of a modern act. Before this step is taken, the medical profession should determine the essential provisions. It would be a great gain if the six Medical Boards were controlled by a single Act and if registration in one State would be recognized throughout the Commonwealth. The Federal Committee have consulted the Branches as to the advisability of ascertaining whether the individual States would be prepared to surrender their sovereign rights in regard to medical registration to the Federal Government. It appears to us that this is a very

proper instance for the substitution of Federal for State control. The States would lose nothing by the change and the community would benefit considerably.

The most important task before the Branches is that of deciding on the best method of maintaining a high standard for entrance to the medical profession in Australia. It is essential that admission to the profession should be limited to those who have undergone a prescribed course of training and who have passed standard test examinations. No difficulty presents itself in connexion with registration in virtue of Australian degrees or degrees and diplomas entitling the holders to register in Great Britain and Ireland. The matter is different in regard to persons who have studied and qualified in other countries. In the first place it would be possible to exclude those persons altogether. Such a drastic provision would lead to disadvantages in particular cases, and is not regarded as desirable. In the next place the provision for the admission of practitioners holding foreign qualification to the profession in Australia could be included in a so-called reciprocity clause. This means that evidence of registration in another country would entitle the individual to registration in Australia, provided that registration in Australia were recognized in the country concerned. An alternative would be that the reciprocity should be between the other country and Great Britain. At present no country stands in reciprocal relationship in this connexion with Australia or with any of the Australian States, and consequently the effect of the former kind of reciprocity clause would be a temporary exclusion of all foreign medical practitioners. It has been argued that since all diplomatic negotiations with foreign countries would have to be undertaken by the Imperial Government, the likelihood of any arrangement of this kind being effected between Australia and another country, would be meagre. Whether the second suggestion would materially alter the prospects of a foreign practitioner gaining admission to the Australian medical registers, cannot be determined. It is significant that in Great Britain and Ireland the offer of a reciprocal arrangement has resulted during the course of many years

in its limited acceptance only by Italy. There can be no doubt that the reciprocity provisions constitute an equitable method of dealing with persons who seek registration in virtue of a foreign degree or diploma. If the Branches desire that in exceptional cases means should be available for the registration of a foreign practitioner, apart from the reciprocity clause, a remedy might be found in a special State examination. It will be remembered that the New South Wales *Medical Practitioners Amendment Act, 1915*, contains both the reciprocity and the State examination provisions.

The British Medical Association has for many years pressed for an amendment of the *Medical Act* of Great Britain. When the Council was engaged in the drafting of an amending bill, it was recognized that the institution of a State examination as an essential to registration, was eminently desirable. The conditions in the old country where the Universities, the Royal Colleges and the Apothecaries' Societies were recognized as licensing bodies, differ from those in Australia. In the former a standardization of the qualifying examinations is required, because of the great differences between the amount of theoretical and practical knowledge necessary for the acquisition of the various degrees and diplomas. Much less difficulty would present itself in Australia. The examinations for the degrees of bachelor of medicine at the three Australian Universities could be accepted as State examinations, provided that the standard be maintained at a prescribed level.

The inclusion of a clause to provide for the removal of the name of a practitioner for infamous conduct in a professional respect, the question of an annual registration fee, and the provision for direct representation of the medical profession on the medical board or medical boards are matters on which the Branches will instruct their representatives on the Federal Committee. We trust that this matter will not be allowed to drop until finality has been reached.

THE BROKEN HILL EPIDEMIC.

During the course of 1917 a series of cases of illness characterized by high fever, relatively early mental clouding and convulsions were noted in

various parts of New South Wales. A few cases with similar symptoms and clinical course occurred at Townsville during the latter part of the summer. Someone called this disease "the mysterious disease," probably because it was, and still is, impossible to determine its exact nature and consequently to ascertain whether the cases are in reality aberrant types of known diseases or something new. In August, 1917, we ventured to question whether the cases which had been observed were instances of a single pathological condition or whether they were cases of different diseases. There is always some danger, when what appears to be a new problem in medicine has to be solved, of misleading and entirely unwarranted statements finding their way into the daily newspapers. Paragraphs of this kind form attractive reading to the morbidly disposed, and the public is stupid enough to believe almost anything that appears in print. Medical practitioners may forget that an ethical code demands that notoriety should not be sought nor gained by the appearance of their names in connexion with statements concerning these matters. In the special instance of the series of cases at Broken Hill, Bourke and other towns in New South Wales, many foolish opinions have recently appeared in the daily newspapers of all the States. Some of these pieces of alleged information have been published ostensibly on the authority of medical practitioners. The result of this has been that the public has been mystified and to some extent alarmed, and a few medical practitioners have run the risk of having to reply to a charge of having allowed themselves to be interviewed.

The facts are but few. In 1917, and again this year, there have occurred many cases of acute illness, characterized by a sudden onset, high fever, unconsciousness and convulsions. These cases have been limited, as far as has yet been ascertained, to certain districts with similar, somewhat peculiar climatic conditions. The cases have terminated in death in the majority of instances. In some cases a careful post-mortem examination has been performed. Dr. A. Breinl recorded in May, 1917, the fact that in one instance he had been able to make a post-mortem examination and that the morbid

changes corresponded to those met with in acute anterior poliomyelitis. Drs. J. B. Cleland, Burton Bradley and E. Buckley also described a case in which the changes were indistinguishable from those of anterior poliomyelitis. Since the disease has again appeared, Dr. Cleland has set to work to study its nature, and no doubt in the course of time, when his experiments have been carried on to a stage justifying their record, he will publish his findings. At present we cannot say more than that he has succeeded in producing a disease of an encephalitis type in monkeys by the intracerebral injections of emulsion of the spinal cord of a person dead of the disease.

No useful purpose would be served by a speculation at the present juncture as to whether or not this disease is caused by Flexner's organism of anterior poliomyelitis. The question cannot be answered until further information is at hand. In the meantime it would be advisable if it were more generally recognized that the medical profession has a duty to perform in reporting to the health authority every case in which there is a suspicion that it may prove to be an instance of a notifiable disease. During the first quarter of 1917, when this disease was relatively prevalent, there were but 22 cases of anterior poliomyelitis notified throughout the whole of Australia. We feel convinced that the actual number of cases was much greater. At the present time, anterior poliomyelitis is approaching epidemic proportions in Victoria. During the three weeks ending February 24, 82 cases have been recorded, while in the preceding four weeks, from January 5 to February 3, there were only 30 cases. There may be some dependence between the outbreak in Broken Hill and the Victorian epidemic. On the other hand, it is of importance that the true incidence of other infective processes should be known. It was formerly held that the causal organism of a definite disease always gives rise to the same typical lesions. It is now known that the pneumococcus, the meningococcus, the diphtheria bacillus and many others may attack unusual tissues or parts of the body, and give rise to illness strikingly different from the classical forms. An abnormal prevalence of any infection might lead investigators on the right track. We would advo-

cate that, while the material is plentiful, the investigations into the nature of the disease should be taken up by as many competent workers as possible. The Federal Serum Laboratories might be utilized for this purpose.

THE SUPPLY OF BACTERIOLOGISTS.

The Department of Health of Tasmania has twice sought, by advertisement throughout Australia during the last twelve months, the services of an Assistant Health Officer capable of conducting bacteriological work in the laboratory. No person possessed of sufficient bacteriological experience was found among the applicants. The reports of this Department show that the bacteriological investigations carried out in the laboratory comprise the detection of *Bacillus diphtheriae*, no doubt by culture and the staining of smears, the discovery of *Bacillus tuberculosis* in sputum, probably by differential staining, the isolation of meningococci from cerebro-spinal fluid and nasal swabbings, the staining of pus-smears by Gram's method to detect gonococci, and the performance of Widal's test for *Bacillus typhosus*. This bacteriological work is of a simple nature and can be readily carried out without any expensive equipment or expert bacteriological technique. As a matter of fact, it has been the custom in the Medical Schools of the Australian Universities to give every medical student instruction in this class of bacteriological investigation. Although each student receives this practical training in what may be regarded by many as clinical medicine, it is not usual in Australia for the medical practitioner to continue any bacteriological work as part of the every-day practice of his profession. This is no doubt due to a lack of confidence in his results, dependent on a limited experience. The difficulty in obtaining teachers in the Universities has led to the institution of large classes, so that students receive little of that individual attention so necessary in teaching practical scientific methods. In many places one teacher is available for each fifty students, so that the practical instruction is more or less perfunctory.

In addition, there is little inducement to study

bacteriology in greater detail. The remuneration offered for medical laboratory work is much lower than for general practice. Not only so, but the laboratories are so under-staffed that research cannot be undertaken unless the routine work is done by unqualified assistants under more or less medical supervision. The remedy lies in offering the bacteriologist sufficient opportunity for advancing medical knowledge. The true scientist seeks his reward in the results of his work rather than in the remuneration of his services.

DIET AND GLYCOSURIA.

While the tolerance for carbohydrate in diabetes can be raised to a variable extent by the enforcement of starvation days, we are still faced with the fact that little or nothing is known concerning the nature of the primary metabolic disturbance which leads to the disease. In the absence of an exact understanding of the chemical changes which lead up to an accumulation of sugar in the blood and to the excretion of sugar in the urine, physicians are compelled to fashion the treatment of this condition according to the indications given by the amount of sugar in the blood and urine and by the presence or absence of acetone, diacetic acid and oxybutyric acid. It should be remembered that the diabetic is not cured, even if a dietary be found which will remove all the sugar from the urine. Moreover, there are forms of glycosuria which are not associated with permanent changes in the physiology of the organs, and in these cases, continued good health may apparently be established by dietetic means. The greater part of our practice in this connexion is empirical and much of it is still unsatisfactory. Major Herbert French¹ pleads for greater elasticity in the dieting of patients. He starts by stating that: "to live along absolutely physiological lines seldom makes life happy; indeed some of the physiological dietists that I have seen, who weigh their foods and calculate their calories, are amongst the most miserable I have met." After having observed the misery occasioned by a strict diabetic diet, he asked himself whether there was any evidence that this procedure actually lengthened the life of the patient, and even if it did lengthen it, whether the patient would not have been better with a shorter, but more comfortable existence. He tells the well-known story of the patient who refused to follow the advice of adhering to a strict diet, and yet lived comfortably and without grave symptoms for a long series of years. On the other hand, his experience has taught him that much good can be done by a judicious dieting, controlled by sound general principles. In the first place he prefers to regulate the diet rather than with a view to the reduction and elimination of acidosis than in the direction of a reduction of the sugar in

the urine. He aims at giving as much carbohydrate as the patient will tolerate, and takes his danger signals from the appearance of oxybutyric acid and diacetic acid. Experience has taught him that the majority of patients tolerate arrowroot, tapioca, sago, rice and oatmeal better than they do wheat starch and sugar. At times the exclusion of wheat starch and sugar may lead to a reduction of the sugar in the urine, while the acidosis persists unchanged. The addition of oatmeal may lead in these cases to a pronounced lessening of the acidosis. Even a threatening coma may pass off as a result of this concession. Similarly the introduction of two or three potatoes of average size into the diet may be beneficial. He admits that the diet should be constructed in reference to the sugar tolerance of the patient, but this means elaborate and expensive chemical analysis. For poorer patients the urine should be watched for the appearance of acetone, diacetic acid and oxybutyric acid and the diet planned according to the results of the analysis. The weight of the patient, taken at regular intervals, also constitutes a reliable guide to the suitability of a diet. When starvation is indulged in, the patient should be allowed to return on the following day, to the diet which has been found to keep him comfortable. In other words, Major French aims at giving his patient as generous a diet as is possible without endangering him by the appearance of acidosis. This teaching, which is based on experience, differs materially from Allen's treatment of starvation and greatly restricted diet.

A QUESTION OF COMPARISON.

On February 26, 1918, Dr. R. Arthur, M.L.A., asked the Colonial Treasurer of the New South Wales Government what were the salaries of the Crown Solicitor, the Director-General of Police, the Director-General for Public Works, the Director-General for Public Health and the Inspector-General of the Insane, and whether he could give the reason for discrimination if the salaries of the two last named were less than the others. The reply given was that the salaries of the officers mentioned in the question were £1,640, £1,500 with an allowance of £162 *per annum* in lieu of quarters and light, £1,500, £1,200 and £1,000 respectively. The Inspector-General of the Insane received fees as Court Visitor in addition. The Director-General for Public Works was on leave prior to retirement and the position would be abolished when he retired. The salaries had been fixed by the Public Service Board after full consideration of the positions and the nature of the duties appertaining thereto. Dr. Arthur appears to hold the view that salaries of public officers should be fixed with reference to the salaries of other public officers. It is doubtful whether such a principle could be maintained. The more usual method has been to offer what is regarded as a sufficient salary to those applying for a vacant position and to increase this salary from time to time, according to the manner in which the officer has performed his duties. It

¹ *Journal of the Royal Army Medical Corps*, November, 1917.

would be extremely difficult to assess the relative monetary value to the community of the services of the five officers mentioned. Had Dr. Arthur framed his question differently and enquired whether the Colonial Treasurer considered that the salaries at present paid to the Director-General for Public Health and the Inspector-General of the Insane were commensurate with the importance of the duties which they had to perform and with the responsibilities they were called upon to bear, and if not, whether he would take steps to increase these salaries to an adequate amount, we should have had great pleasure in supporting him and in urging for a favourable reply. When a wharf labourer can earn as much as a highly trained scientist, it is useless to press for remuneration on a comparative basis.

THE DIAGNOSIS OF ABDOMINAL LESIONS.

In the present issue we publish an able article by Dr. W. J. Stewart McKay on the differentiation between lesions of the stomach, pancreas, duodenum, gall-bladder, kidney, ureter, appendix, ovary and Fallopian tube, prior to the autopsy *in vivo*. There is much to be learned from this article, not only because it is based on the wide experience of a capable observer, but also because it illustrates how fashions in medicine and surgeon may mislead the practitioner and deteriorate his practice. He instances cases in which an error in diagnosis is made because the practitioner confuses the manifestations of disease with the disease itself. The moral of Dr. Stewart McKay's lesson is: Do not let others think for you. By using his eyes and other senses and by testing his conclusions arrived at at the bedside, when the abdomen has been opened, he has been able to recognize when symptoms are apt to lead him astray and when text-book knowledge is inferior to personal experience. Too many medical practitioners accept the opinions of eminent members of the profession, because they are regarded as authorities. They appear to forget that an opinion is valueless, unless it can be supported by ascertainable facts. The science of medicine is built up on accurate observation, not on theory and speculation. Imagination and the facility for finding a plausible explanation for demonstrable phenomena are useful qualities in a scientist, but they are highly dangerous unless the individual is able to distinguish between fact and fancy. Unfortunately many lime-light physicians and surgeons achieve popular eminence by the recording of opinions. The scientist who observes well and records facts in a few words, is a more valuable contributor to the book of knowledge than the verbose philosopher.

Public Health.

NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending February 23, 1918:—

	Metropolitan Combined District.		Hunter River Combined District.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever ..	14	0	3	0	15	1	32	1
Scarlatina ..	9	0	0	0	10	1	19	1
Diphtheria ..	57	0	2	0	29	1	88	1
C'bro-Spl. Menin.	1	1	0	0	3	3	4	4
Poliomyelitis ..	0	0	0	0	2	0	2	0
*Pul. Tuberculosis.	19	12	1	0	0	0	20	12
Malaria ..	1	0	0	0	0	0	1	0

* Notifiable only in the Metropolitan and Hunter River Districts, and since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending February 24, 1918:—

	Metro- politan.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Diphtheria ..	44	1	24	0	68	1
Scarlatina ..	12	0	23	0	35	0
Enteric Fever ..	6	1	23	1	29	2
Pulmonary Tuberculosis	22	4	16	1	38	5
Poliomyelitis ..	21	—	18	—	39	—

QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending February 23, 1918:—

Disease.	No. of Cases.
Cerebro-spinal Meningitis ..	2
Diphtheria ..	37
Puerperal Fever ..	2
Scarlatina ..	4
Pulmonary Tuberculosis ..	7
Enteric Fever ..	17
Erysipelas ..	2

SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending February 16, 1918:—

	Adelaide.		Rest of State.		Totals.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Pulmonary Tuberculosis	1	2	15	7	16	9
Diphtheria ..	5	0	11	1	16	0
Pertussis ..	0	0	7	0	7	0
Scarlatina ..	0	0	5	0	5	0
Enteric Fever ..	1	0	3	1	4	1
Erysipelas ..	1	0	1	0	2	0
Cerebro-spinal Menin.	0	0	2	0	2	0
Morbili ..	0	0	2	0	2	0

WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the week ending February 16, 1918:—

	Metro- politan.		Rest of State.		Totals.	
	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.
Enteric Fever ..	2	3	5	5	5	5
Diphtheria ..	9	2	11	11	11	11
Scarlatina ..	4	1	5	5	5	5
Pulmonary Tuberculosis	3	0	3	3	3	3
Erysipelas ..	2	0	2	2	2	2
Cerebro-spinal Meningitis	1	0	1	1	1	1
Puerperal Fever ..	1	0	1	1	1	1

TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, for the four weeks ending February 2, 1918:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Diphtheria ..	9	4	21	34
Enteric Fever ..	3	0	4	7
Pulmonary Tuberculosis	2	1	7	10
Scarlatina ..	1	0	1	2
Poliomyelitis ..	0	0	1	1
Ophthalmia Neonatorum	0	0	1	1

Abstracts from Current Medical Literature.

MEDICINE.

(83) Paroxysmal Tachycardia.

F. A. Willins states that paroxysmal tachycardia of ventricular origin is a rare condition, occurring in only 0.047% of all abnormal electrocardiograms recorded in the Mayo Clinic (*Boston Med. and Surg. Journ.*, January 10, 1918). Two cases of the five recorded revealed conduction impairment, one in the junctional tissues and one beyond the main branch of the bundle of His. The ages of the patients varied from 21 to 62 years. Four gave definite history of previous streptococcal infection. Syphilis was not determined in any case. The symptomatology was very uniform; palpitation, tachycardia and exertion dyspnoea being complained of by all. The paroxysms had sudden onset and abrupt termination, lasting from several minutes to several weeks. Vertigo attended the paroxysms in three cases. One patient had slight oedema of the lower extremities. All cases displayed slight increase of cardiac dullness to the left. In none was valvular disease demonstrated. The pulse-rate during the paroxysm was 109 to 267—average 174. One case coming to necropsy revealed atheroma of the left coronary artery. The ventricular myocardium presented a few areas of fibrosis. The mitral and tricuspid valves were thickened, but were apparently competent. The aortic valves were atheromatous, as were also the thoracic and abdominal aorta. Digitalis, in two cases treated, did not affect the abnormal rhythm. As life depends on ventricular action, this condition is a grave one.

(84) Malarial Mimicry.

A. E. Kamar reports two curious cases of malaria (*Journ. of Trop. Med. and Hygiene*, December 15, 1917). The first case simulated acute mania. The patient, aged 25, a Berberean male, was so violent that he had been put in chains and under a guard, for fear he would do mischief to himself and others, having already attacked some bystanders. He talked incessantly, and did not reply correctly to any question. He had no previous history of insane tendency, and had not suffered from syphilis. He did not take alcohol. His temperature never rose above normal. His spleen was enlarged. He had recently suffered from attacks of fever. Malaria was diagnosed, and quinine medication exhibited, at first by intramuscular injection, then by mouth. In fourteen days he was discharged, in good health, with a normal-sized spleen and normal mentality. The second patient mimicked cerebro-spinal meningitis. The patient, aged 12, was brought to hospital unconscious, with dilated pupils, very slight corneal reflex, involuntary urination and twitching of fingers and toes. The rectal temperature was 39.4° C. The spleen was enlarged. The boy was taken ill suddenly on the previous day.

Subtertian parasites were found in the blood, and meningococci were absent from the cerebro-spinal fluid. No meningococci were found in naso-pharyngeal swabs from the contacts. Quinine was pushed, and the patient made an uninterrupted recovery.

(85) Membranous Croup.

D. M. Lewis observes that all cases of membranous croup are not diphtheritic in origin (*Boston Med. and Surg. Journ.*, January 10, 1918). Streptococcus laryngitis stimulates diphtheria, and may be fatal. Not every case of obstructive laryngitis in measles is diphtheritic in origin, as is shown post mortem. This complication may be purely streptococcal, and the larynx may be oedematous only. Immediate intubation is indicated. Cases so treated have done well without antitoxin, and, after periods even up to one year have not developed even palatal paralysis. A practically moribund patient recovered after intubation. All the patients treated by antitoxin and eventually intubated died. In laryngeal diphtheria antitoxin is relied on to combat toxicity and intubation is performed, because it is known that only at a certain time is the relief of obstruction necessary. Streptococcal infections are more rapid. In waiting for the same degree of obstruction the case is more immediately lost. The streptococcal nasal carrier leaves behind him a train of victims of major and minor illnesses, which is unbelievable, until definitely traced.

(86) Massage of the Colon.

Franklin W. White summarizes the effects of abdominal massage, especially of the colon (*Boston Med. and Surg. Journ.*, January 10, 1918). Cannon's method of direct examination of the bowel by X-rays was used. There was great variation in different persons in the accessibility of the parts of the colon to massage. Vigorous massage usually mashed up the contents of the colon, but had little or no effect in moving the contents forward. When a full caecum was apparently emptied at once, it was found that gas had moved forward, and solid contents merely flattened out in both directions. Massage sometimes delayed, but usually hastened, the passage of the colon contents at the end of several hours, evidently by stimulation of slow peristalsis. The effect of this stimulus was small in comparison with the stimulus of taking food. A rapid onward "mass movement" of a large portion of the colon contents was rarely seen after massage. These large movements had no direct relation to the force of massage, but followed gentle palpation. Prompt emptying of any part of the colon by massage is a fallacy. This is especially true of the low caecum, which is usually inaccessible, and is often pushed lower and filled fuller than before. The good effects of massage are found in a mashing up of the intestinal contents and a stimulation of muscular tone and slow peristalsis, which usually drive the contents slowly forward for several hours.

(87) The Treatment of Syphilis.

In the course of a comprehensive article (*Quart. Journ. Med.*, July, 1917) on the treatment of syphilis, in which he gives a summary of the history of the arsenical preparations, L. W. Harrison states that salvarsan and neosalvarsan and their chemical equivalents may produce the following symptoms:—(i.) vasomotor disturbances during or immediately after the injection; (ii.) rigors, pyrexia, headache, vomiting, diarrhoea, urticaria, and herpes, appearing a few hours after the injection; and (iii.) albuminuria, stomatitis, chronic headache, lassitude, loss of appetite, weight and sleep, erythema and dermatitis, jaundice and severe cerebral symptoms, appearing from one day to a month after the injection. He deals in some detail with the precautions which may be taken to prevent these undesired effects. He holds that the iodides are invaluable as adjuvants to the more specific treatment, although they have no anti-spirochaetal action. McDonagh has introduced two preparations for the treatment of syphilis. One is an iron preparation called ferrivine, and the other is a sulphur compound, called intramine. The remedies are used in conjunction. The merits of these preparations have been extensively discussed and various views have been expressed. Harrison points out that they are extremely unpleasant in their side effects. They failed to produce any effects on the signs or symptoms in three cases and no evidence of an action on the spirochaetes was elicited. In one case fresh lesions appeared during the treatment. When injected intravenously ferrivine gave rise to alarming symptoms of dyspnoea and shock. Sequeira described it as the most efficient emetic he knew. It has apparently been withdrawn. The author concludes his article with an account of the proper management of syphilis and syphilis of the central nervous system, including intrathecal injections of salvarsanized serum, mercurialized serum and neosalvarsan (914).

NEUROLOGY.

(88) Neurological Reports from the French Army.

This series of reports (*Revue Neurologique, Paris*, December, 1916) is a continuation of those abstracted in this Journal on July 8, 1916. They cover 150 pages and epitomize the experiences of groups of specialists in the 21 hospitals specially provided for the treatment of nervous and mental trouble arising from the war. At the Salpêtrière, the late Professor Dejerine and his colleagues reaffirmed the importance of careful examination of an injured nerve. When on testing the cicatricial skin and its surroundings, sensations were referred peripherally, they took it as a sign that regenerated fibres, instead of joining the peri-

pheral segment, were wandering in the neighbourhood of the lesion. Summarizing their experience of operations on nerves, they said that the removal of adhesions had given excellent results, but sutures had been unsatisfactory. They had obtained complete recovery after suture of the musculo-spiral nerve only. Grafts they regarded as useless, in such cases no improvement beyond partial recovery of sensibility had been reported. They held that no operation of any kind should be performed on a peripheral nerve without the advice of a neurologist.

In wounds of the brain, they indicated the difficulty of giving a prognosis when the symptoms were subjective, but made the significant comment that such symptoms were specially frequent in wounded having a minimum of organic signs. In wounds of the cerebellum, André Thomas found a new sign, "passivity"—passive movements of the limb were more free on the affected than on the normal side, and the knee jerk might be of the pendulous type. Marie and his colleagues gave an excellent account of the subjective disorders following head wounds. Headache, faintness (wrongly called vertigo), depression, irritability, heightened emotivity, insomnia, loss of energy and memory were the chief symptoms. They yielded to psychotherapy. In cases of cortical monoplegia, after a lesion of the ascending parietal convolution, they had constantly observed sensory disorder, consisting of anæsthesia with a radicular distribution, and, loss of the stereognostic sense. *Main corticale*, a consequence of wounds of the mid-Rolandic region, in which the motor and sensory loss were confined to the hand, was a new condition. They had found difficulty in differentiating between abscess of the brain and non-suppurative encephalitis. Abscess of the brain following a wound seldom presented the classical symptoms—headache, vomiting and optic neuritis—supervening several weeks after the injury. They were opposed to indiscriminate trephining and searching for splinters and bullets in the brain, saying that these foreign bodies were tolerated better than was generally supposed. And their experience from a great many cases of osteoplastic covering of skull defects was that in most the subjective complaints were not lessened. For the localization of intracranial foreign bodies they had devised a radiographic aid. Strips of lead were laid along the principal sulci of a brain previously hardened *in situ*. The brain was then replaced in the head and the whole exposed to X-rays. So, a true picture of the position of sulci in relation to bones was obtained, over which a skiagram from a living subject might be laid. By this means they had made important observations on the localization of motor and speech centres (*vide The Medical Journal of Australia*, January 26, 1918, abstract 33, pp. 74-75).

Babinski had studied reflex disorders and causeless contractures following wounds, and in concluding that they were not hysterical but due to sympathetic disturbance, answered a much-debated question. In every case he found vaso-motor and thermic disorders and abolition of cutaneous reflexes, of which certainly the latter could not be produced by hysteria.

Souques dealt with epilepsy, which according to the French, followed in 5% of cases of head wound; and regarding convulsions appearing in previously trephined men, deprecated further operation, specially cranioplasty, remarking sensibly that epilepsy was due to high tension, and it was therefore good to have a safety valve. Incidentally he referred to the boon of the steel helmet. He mentioned further that he had cured all his cases of camptocormia (his own term to denote post-traumatic flexion of the trunk) by the temporary application of a plaster of Paris corset, aided by suggestion. Français noted that "deaf-mutes" recovered more rapidly when kept in touch with the front than when evacuated to base hospitals. He also gave a good account of cerebral concussion (*commotion cérébrale*) without wound. To the known symptoms he added those of *lesions en foyer*, thus, organic hemiplegia from focal lesion of motor cortex or tracts, ataxia from lesion of cerebellar tracts, and epilepsy. At the beginning of the war these were mistakenly regarded as hysterical, but there was now little doubt they were the outcome of hæmorrhagic focal lesions. Graves's disease, hemichorea and muscular dystrophy might have a similar origin. Claude described a syndrome of cerebro-spinal hypertension following contusions of the cervical region from shell-burst or bullet-graze. Headache, vertigo, vomiting, papilloedema, paralysis of cranial nerves, mydriasis, exophthalmos, and local spinal root pains and paralyses were the indications. Lumbar puncture proved the pressure and gave relief. He supposed that distension of sub-arachnoid cisterns at the level of the isthmus was the cause of the altered pressure. Of painful injuries of nerves he treated 100 cases in six months. His method was to liberate from adhesions and isolate in gutta-percha, or to inject alcohol, or to combine these procedures, and he gave relief in 75 cases. He did not agree that wrapping a nerve in gutta-percha did harm by cutting off nutrition, but he adopted an unusual mode of wrapping, in spirals, like a bandage. Vincent treated 1173 cases of hysteria by what he called intensive methods, which consisted largely of exercises. Dividing his cases into affections of the arms, affections of the legs, and psychoses, he gave them special exercises for four hours daily. He returned 25% to the front. He had strong views concerning trephining, urging surgeons at the front to be less free with this operation. Lortat-Jacob, studying the after effects of trephining and cerebral con-

cussion, found various new and constant signs of organic disturbance, such as, an oscillatory temperature, or a degree of fever easily provoked; slight paresis, showing itself dynamometrically or by other tests; muscular hypotonia; inequality of tendon reflexes, all of which needed to be studied methodically in a large series of cases in order that prognosis might be assisted. Sollier noted a remarkable decrease in the number of cases of post-traumatic hysteria as the war had progressed. His figures read, 259 cases in the 5 months of 1914, 271 in 1915, and only 31 in the first 9 months of 1916. In treatment he recommended electro-therapy. Lepine had seen 5000 cases of psychoneurosis and insanity. He had written a book on the subject. His statements that the phenomena following concussion were too often ascribed to emotional disturbance, when in reality they were of organic origin, and that a persecutory delusional state was the commonest form of war-insanity, might be taken as indisputable. Sicard, for painful nerve wounds, remained faithful to injections with alcohol. Also he recorded several cases of ulnar paralysis, without wound, ascribable to cold or compression. Grasset considered the scale of compensations applicable to neurological casualties, but his writings, though important, are too detailed for an abstract. Malret had seen a number of cases of *épilepsie larvée* converted by war conditions into active epilepsy; also 21 cases of general paralysis precipitated by traumatism or concussion, and 11 cases of nervous or mental disability attributed to antityphoid vaccination. Hesnard, in cases of nerve lesions where there was evidence of cicatrization without break of anatomical continuity, advocated X-rays, 10 to 30 half-hour sittings, not so strong as to cause erythema. He thought this dissolved inflammatory tissue. Chiray, in such cases, favoured the use of ionization with iodide of potassium. Porot discussed functional disorders among the French coloured and other troops. He found among the Senegalese that functional affections of the limbs were rare, but puerile forms of hysteria common. The Creole suffered much from *grande hystérie*; his capacity for auto-suggestion was amazing. The Mussulman was victimized by perseveration to an extraordinary degree; prone to passivity and inertia, time to him had no meaning. The Algerian Jew, of active imagination and restless temperament, was readily depressed, and a common subject of transitory neuroses. The Serbian was astonishingly free from neuroses of all kinds. Léri gave an account of the "barrage" of neurological casualties. These, instead of being invalidated, to bases; were held up in hospitals near the front. The results had surpassed expectations, 91% had been returned to the lines. Treatment had been purely psycho-therapeutic, and success was ascribed to taking the cases in hand in good time and while in good heart.

British Medical Association News.

SCIENTIFIC.

At a meeting of the South Australian Branch, held at the House of the Branch on November 27, 1917, the discussion of a paper by Dr. J. A. G. Hamilton, entitled "The Symptoms, Prophylaxis and Treatment of Toxæmia of Pregnancy" (see *The Medical Journal of Australia*, November 20, 1917, p 431) took place.

Dr. A. Lendon said that Dr. J. A. G. Hamilton's paper covered such a vast amount of ground that it was impossible to exhaust the material in debate. As it was originally suggested that the paper should be a peg upon which to hang a discussion about the so-called "ante-natal clinics," he dealt first with that subject.

During the period from September, 1877, to December, 1901, he had almost been inclined to regard midwifery as one of the necessary evils of general practice, though at the same time the key to success. A midwifery case was one to bother about as little as possible, a case to be got over as quickly as possible, with a trustful leaning on providence to prevent any ill results. Such an attitude, if not defensible, was at all events intelligible, if the fact was recalled that it was less than a century ago that Sir Henry Hallford wrote to Sir Robert Peel to the effect that midwifery "was an unfit occupation for a gentleman of academic education." Difficulties were thrown in the way of those who practised midwifery with respect to high office or the fellowship in the Royal Colleges of Physicians or Surgeons. During this early period there was no nonsense about ante-natal clinics. It was not impossible for him to see his patient for the first time when she was advanced in labour. At a later period, however, when he had to teach others the theory and practice of midwifery he found it necessary to go to school again, and by paying special attention to his prospective confinement cases from the early stages of their pregnancy, he insensibly introduced into his practice an ante-natal clinic. He took exception to the term. It would be correct to speak of it as ante-natal in connexion with the fetus, but it was a literary inexactitude to speak of the ante-natal treatment of pregnant women. He suggested the term pregnancy clinics.

He held the opinion that only about 5% to 10% of pregnant women really required any definite treatment, but he thought it was desirable that an eye should be kept upon every pregnant woman, and especially upon the primigravida. Many patients consulted the doctor soon after they missed a period. He always examined them if they were in any doubt as to pregnancy. He also made a point of examining them if they complained of any exaggeration of the usual signs of pregnancy. On two recent occasions he had relieved distressing vomiting by discovering and remedying a retroflexed uterus. He had come to the conclusion that a retroflexed uterus was not uncommon in early pregnancy, that it was a fertile source of miscarriage, and that a Hodge's pessary for three or four months was very desirable. If, however, albuminuria, and uncomfortable symptoms were absent, he instructed the patient to return at the end of the eighth calendar month. A careful examination by abdominal palpation and bimanual examination was then made. The lie and the position could usually be determined. If the head was low down in the pelvis, the labour would be satisfactory. It might be tedious, but it would not be difficult. He had been rash enough to make this statement in 1911, and a letter had appeared in the *Australian Medical Journal* disputing the fact that the head was ever low in the pelvis at this stage of pregnancy. He maintained that in a primipara, at the end of the eighth calendar month, the fetal head was often so low in the pelvis that it was a wonder that the mother was able to urinate or defecate. There was a cast in the Museum of the University of Melbourne illustrating this. If in a primipara, the head were not low in the pelvis, there was the possibility of a contracted pelvis; this, however, was so rare in South Australia, that he only deemed it necessary to make accurate measurements if other circumstances suggested deformity. In 1,000 cases at the Queen's Home there were only two contracted pelvises.

In the next place he dealt with the question of exercise and mode of life during pregnancy. One of his patients had bicycled regularly up to the thirty-sixth week, in the dusk. He always advised patients to look upon pregnancy as a natural physiological process, and beyond attention to the bowels he laid down no special rules, except those of the "simple life." Some sort of public clinic could easily be arranged at the Adelaide Hospital, or at the Queen's Home, and it would be not only of great advantage to the women themselves but also distinctly useful in the teaching of students.

The bulk of Dr. Hamilton's paper was concerned with toxæmia of pregnancy and with one particular operation, Dührssen's vaginal Cæsarean section. This operation had been in vogue for some years, and was sufficiently described in text-books. He had been able to attain the same result in the same space of time by means of Bossi's instrument, and with no ill consequences.

The pregnant woman occasionally resembled an absent-minded person of his acquaintance who had been known to get into a tram in King William Street, and find himself sometimes on the way to Payneham or Paradise, another time going towards Bowden, or else to Walkerville. So the pregnant woman, not well in hand, might drift towards hyperemesis, eclampsia, or acute yellow atrophy. Dr. Hamilton's classification was not quite exhaustive. There was another form of trouble, of which he had recently met a pronounced example, viz., acidosis. There was acetone and diacetic acid in the urine without any glycosuria; abortion became necessary. But for the examination of the urine the case would have been considered one of pernicious vomiting. He had never seen a fatal case of vomiting. Two patients who had given him serious anxiety weathered the storm and seemed none the worse. He had noticed severe heartburn complained of by the mother in the later months of pregnancy and associated with *icterus neonatorum* on two consecutive occasions. In the first the condition was fatal. On a later occasion it was treated, with the result of saving the infant.

Dr. Hamilton had mentioned the paper by Dr. James Young. This paper was one of the most striking that he had ever read. It was the result of an excellent piece of work, starting with a definite theory as to the cause of eclampsia, demonstrating the association of eclampsia with placental infarcts, and finally verifying the deductions by means of experiments. It might not be the last word on the subject of eclampsia. There was an equally remarkable and suggestive paper by Dr. Leith Murray, of Liverpool, dealing with the nature of the toxin rather than its origin. It demonstrated the fact that there was evidence of four different types of toxin, viz., cytolytic, hæmagglutinating, endotheliolytic and neurotoxic. It compared and contrasted the effects of these toxins with those of similar toxins in snake venom, and showed that there was evidence gradually accumulating that the pregnant woman protected herself against a poison directly comparable to a snake venom.

In regard to recurrence, he stated that though this was rare, he had had one case in 19 patients. On the other hand he had met with two sets of instances in which near relatives had suffered from eclampsia. The morphine treatment had been mentioned rather as a novelty in Dr. Hamilton's practice some 35 years ago. It, or rather opium, had been the treatment more than 70 years, for Dr. J. H. Ramsbottom had discussed its usefulness, only to condemn it.

Dr. R. Humphrey Marten recalled the case of a recently married lady, who had had no menstruation since her marriage, and was complaining of incessant vomiting. She was a very cheerful, handsome, well-built brunette, of about 27 years of age. She had always enjoyed good health prior to her marriage, and had led a very active life. She stated that morning vomiting began shortly after her wedding and had since become continuously worse. She was then supposed to be about two months pregnant. In spite of her fairly persistent vomiting she was in good bodily condition, and had no physical signs of any organic disease, and to all the ordinary tests her urine was normal and free from bile pigments. Her pulse was 72, full and compressible, and nothing abnormal was detected by a vaginal examination, except that the uterus appeared about the size of a two-months' pregnancy. The speaker treated her by all the ordinary methods in use for intractable vomiting of preg-

nancy, but as she daily grew worse he sent her into a private hospital, when it was first noticed that she had an icteric tint about the conjunctivæ, bile pigment in the urine, but with no tenderness or alteration in the size of the hepatic organ to percussion. Her temperature was always normal or subnormal, but her pulse-rate began to rise and her tongue became dry. She vomited everything she took by the mouth. As she was evidently going rapidly downhill, he asked Dr. J. A. G. Hamilton to see her. Dr. Hamilton regarded her condition as an acute toxæmia of pregnancy, and suspected that she had commencing acute yellow atrophy of the liver. He advised immediate emptying of the uterus. The operation was planned for the following morning, but owing to certain circumstances it was postponed. On the following morning she seemed much better, and Dr. Bronte Smeaton thought that it might be safe to wait for a few days. The patient had good days and bad days, but with a gradual decline in her strength and condition. Her jaundice became more pronounced, her hepatic region was distinctly tender, but no diminution in the size of the normal liver dulness was detected. Her urine was deeply bile-stained and contained leucin but no tyrosin or albumin. Her temperature remained normal, but her pulse became so feeble as to be hardly perceptible at the wrist. Her bodily condition had markedly deteriorated. The speaker therefore dilated the cervix under ether, and removed the uterine contents, which consisted of a carneous mass with an external covering of villi, but with no trace of a fetus, in fact it was what is commonly known as a "blighted ovum," or in more strictly medical language, a "fleshy mole." The patient ceased to vomit in 24 hours, and made an uninterrupted recovery. He advised her not to become pregnant again for a few months, but she took no heed of this advice. At the time of speaking she was three months pregnant, and except for an occasional morning vomit, had never felt better in her life.

Turning to the question of the causation of the so-called pernicious vomiting of pregnancy, he referred to Rolleston's views. This author held that the liver was peculiarly susceptible to morbid changes in pregnancy, and that there was reason to believe that necrotic changes in the peripheral zone of the lobules of the liver played a very important part in the production of eclampsia. There was what was described as a liver of pregnancy just as there was a kidney of pregnancy. The acute toxæmias of pregnancy, attended by jaundice, could be conveniently divided into two distinct classes, the febrile and the afebrile. The former were almost invariably due to a coliform infection ascending to the liver either by the blood-stream or by the lymphatics. The cases were attended by high fever, jaundice, delirium and rapid death from what was generally called acute yellow atrophy of the liver, or, more accurately, acute hepatic toxæmia. The temperature at times rose as high as 43° C., and the disease had a very high death-rate. Post-mortem, the liver was found in a condition of acute disintegration. Other organisms besides the *Bacillus coli* had been found, but this organism was the most common offender. In the non-febrile toxæmias no organisms had been found, but in the portal circulation syncytial cells and the cells of Langhans had been discovered, coming from the chorionic villi, and the condition had been termed a villi-toxæmia. Some of the patients appeared to get better, if the uterine contents were removed sufficiently early. When the changes in the liver had progressed beyond a certain stage, the system became poisoned by its products of disintegration beyond recovery. The case recorded was in all probability one of villi-toxæmia, and the patient luckily recovered.

Dr. Marten suggested that puerperal eclampsia was primarily a liver condition, and that the changes in the kidneys were set up by the poisons they were trying to eliminate. This view was probably correct, as cases of eclampsia had occurred before any change has been detected in the urine, or in the kidney on post-mortem examination. No fetus was present in his case. It would be interesting to ascertain whether the incessant vomiting was due to some unknown activity of the chorionic villi connected with the fleshy mole, and whether a normal pregnancy in the same subject would turn out more satisfactorily.

In conclusion, he stated that he had purposely given ether, and not chloroform, as the condition of the liver in delayed chloroform poisoning was similar to that found in acute yellow atrophy, and in other cases of acidosis, or acid intoxication. It had been held that prolonged chloroform anaesthesia had contributed to the production of some of the cases of acute hepatic toxæmic deaths.

Dr. Hamilton, in reply, said he was very grateful for the kindly way members had received his paper, which really had for its object "The Toxæmia of Pregnancy." The suggestions regarding pregnancy clinics were only incidental to the main subject, and time did not allow of his discussing them as fully as he would have wished. He strongly dissented from Dr. Lendon when he stated that in his opinion the end of the eighth month was time enough to examine the pregnant woman and then gave no further heed to the case unless some complications were found. Dr. Lendon could hardly expect them to take some of his remarks on the complications of pregnancy seriously. It was a matter for regret that he seemed to treat these complications so lightly. It was the height of folly to wait for the appearance of symptoms that attracted the serious attention of the patient and led her to consult a physician. It must be remembered that some of the most ominous symptoms of toxæmia were neither painful nor particularly troublesome. In his opinion the physician should see his patient every two or three weeks during the later months of pregnancy, and satisfy himself as to her condition by inspection and by judicious questioning, as well as by examination of the urine. It was not safe to presume on the fact that the patient was apparently strong and vigorous, for it was just in this class of patient that the dreaded toxæmia most frequently developed. Doubtless a practitioner who conscientiously carried out the care of the pregnant woman, would give himself some unnecessary trouble, but he would be repaid in the end, for it was only by this means that he could save some of the mothers and infants now lost from the various complications of pregnancy. If he were content only to examine his patient at the end of the eighth month and then to pay no further attention to her, he would be too late in many cases to deal successfully with these complications.

Toxæmia of pregnancy in particular frequently came on rapidly and with very little warning. No doubt death from excessive vomiting in pregnancy was rare, and many cases were of reflex origin, caused by tumours, displacements, etc., and with proper treatment the cure was neither difficult nor delayed. In the true toxæmic cases, however, the prognosis was always grave, especially if the condition was allowed to continue. He only on three occasions had to empty the uterus for toxæmic vomiting in the early months of pregnancy. One was the case he mentioned in his paper, and he felt sure, from carefully watching that patient, that she could not possibly have gone on for another six months.

Dührssen had described his operation known as vaginal Caesarian section, or more correctly called anterior vaginal hysterotomy in 1906, but very little attention had been paid to it by operators or writers until of late years. In the hands of leading obstetricians it was daily becoming more popular, and he felt sure that if Dr. Lendon would try it, he would never go back to the Bozzi dilator. He (the speaker) had tried both, and was perfectly satisfied that Dührssen's operation was the safer one, because in it the incision was in a safe area and of definite length, whilst with the use of the Bozzi dilator the lacerations might extend in any direction and to any depth. He had lost one patient from hæmorrhage of the cervix after its use, and in another case the hæmorrhage was with difficulty controlled. He possessed an original Bozzi dilator as well as an improved Bozzi dilator, which contains more blades. These instruments he was willing to sell to anyone at a tenth of their original cost, but would strongly advise the buyer to consign them to the scrap heap, if he could not sell them or give them away to his worst enemy.

He was aware that opium was recommended many years ago for eclampsia, but was not then considered safe. It was only some 15 or 20 years ago that morphine by injection was established as a routine treatment by Smyly, at the Rotunda. Since then it had been most extensively used by the majority of obstetricians.

Dr. Marten's case of acute yellow atrophy of the liver was a most instructive and interesting one, and the result most

satisfactory, but if he might be allowed to say so, he had run a grave risk in delaying the operation for emptying the uterus after the jaundice and vomiting had become well marked. He thought that they had acute and milder forms of acute atrophy of the liver, or *icterus gravis*, as the older writers had called it. In the acute cases the onset was sudden and severe, with headache, jaundice, vomiting and perhaps delirium and convulsions. In these cases the prognosis was bad. Few patients recovered, whilst in the milder cases early emptying of the uterus was generally followed by recovery.

Dr. Humphrey Marten showed an endothelioma of the right ovary, removed from a unipara, aged 28 years. Four days after the operation there was a sudden enlargement of the lymphatic glands in the neck and axilla; these remained large for a few days, and then disappeared again.

The undermentioned has been nominated for election as a member of the New South Wales Branch:—

Arthur Charles Robert Todd, M.B., 1914 (Univ. Sydney),
Dungog.

Medical Societies.

(Affiliated with the British Medical Association.)

CENTRAL WESTERN MEDICAL ASSOCIATION OF NEW SOUTH WALES.

The Annual Meeting of the Central Western Medical Association was held at the Woolpack Hotel, Parramatta, New South Wales, on January 23, 1918, Dr. William Mawson, the President, in the chair.

It was resolved that the general meetings of the Association should be held in the months of January, May and September.

The following motions were carried:—

(1) That no member of this Association shall meet any deputation of friendly society lodge members in regard to the Common Form of Agreement without the consent in writing first had and obtained of the Committee.

(2) That the annual subscription be increased from 10s. 6d. to £1 1s.

(3) That in the opinion of this Association the fees for examining applicants for life insurance policies for over £100 should be increased from £1 1s. to £2 2s., and that the fees for examining applicants for policies of under £100 should be increased from 10s. 6d. to £1 1s.; and that the co-operation of the other local Associations be invited.

(4) That all members seeking appointment as medical officers of any friendly society lodge must in the first instance apply directly to the Honorary Secretary of this Association and forward to him the letter of application received from the lodge.

(5) That slips setting out a declaration in regard to the income limit should be supplied to all members, and that all members should request applicants for the medical benefit of the friendly society lodge to sign one of these slips.

The following office-bearers and members of the Committee were elected:—

President: Dr. W. Sigismund Brown.

Vice-President: Dr. R. A. Phipps Waugh.

Honorary Secretary and Treasurer: Dr. E. Cuthbert Hall.

Delegate: Dr. O. E. Bruce Withers.

Representative to Council: Dr. James Kearney.

Representative to Sydney and Suburban Provident Medical Association: Dr. A. Mark Stanton.

Members of the Committee: Drs. H. F. Alsop, Reginald Bowman, R. M. Crookston, E. J. Day, A. W. Gordon, W. C. Grey, James Kearney, William Mawson, A. Mark Stanton, F. W. West and O. E. Bruce Withers.

Honorary Auditor: Dr. F. H. Furnivall.

The notice was given of the following motions for the next meeting:—

(1) That the minimum fee for visiting patients between the hours of 8 p.m. and 8 a.m. be double the ordinary fees.

(2) That a special committee be appointed to deal with all matters in connexion with the appointments of medical officers of friendly society lodges subject to such committee reporting in full an account of its proceedings to the General Committee.

Naval and Military.

APPOINTMENTS.

The following appointments have been notified in the *Commonwealth of Australia Gazette*, of February 28, 1918:—

Army Medical Corps.

To be temporary Lieutenant-Colonel—

Major V. O. Stacy, whilst commanding No. 2 Australian Casualty Clearing Station, 8th November, 1917.

Major J. B. Metcalfe, M.C., performed the duties of Deputy Assistant Director Medical Services, Headquarters, 1st Anzac Corps, from 6th August, 1917, to 25th September, 1917.

To be Lieutenant-Colonel—

Major G. A. W. J. Knight, 1st October, 1917.

Major H. K. Fry, D.S.O., from Deputy Assistant Director Medical Services, 2nd Australian Division, 31st October, 1917.

Australian Military Forces.

Headquarters Staff.

Australian Army Medical Corps—

Lieutenant-Colonel (temporary Colonel) G. Cuscaden, V.D., is to be Deputy Director-General, Australian Army Medical Services (temporarily), with pay at the rate of £850 per annum, inclusive of all allowances except travelling, and is to be granted the temporary rank of Surgeon-General whilst holding such appointment. Dated 23rd February, 1918.

3rd Military District.

Australian Army Medical Corps—

Lieutenant-Colonel (Honorary Colonel) A. H. Sturdee, C.M.G., V.D., is to be Principal Medical Officer (temporarily), with pay at rate of £800 per annum, inclusive of all allowances except travelling, and is to be granted the temporary rank of Colonel whilst holding such appointment. Dated 23rd February, 1918.

The temporary appointment of Lieutenant-Colonel (temporary Colonel) G. Cuscaden, V.D., as Principal Medical Officer is terminated. Dated 22nd February, 1918.

The temporary appointment of Lieutenant-Colonel (Honorary Colonel) A. H. Sturdee, C.M.G., V.D., as President, Permanent Medical Referee Board, is terminated. Dated 22nd February, 1918.

THE PUBLIC HEALTH OF NEW SOUTH WALES.

(Continued from page 184.)

David Berry Hospital.

The Secretary of the David Berry Hospital gives a short report of the work conducted during the year 1915. The number of patients under treatment at the end of the previous year was 17, and of those admitted during the year was 224. The number of those discharged was 221, whilst six patients died. The general death-rate is therefore 2.66%. A small number of patients suffering from diphtheria, scarlet fever and other notifiable infective processes, were under treatment. It appears that the work in the David Berry Hospital does not differ materially from that of any other public hospital, although the number of patients dealt with is small. There were 75 operations, with one death.

The average daily number of patients was 14.52, while the average duration of stay per patient was 22 days. The opera-

tions were performed by four practitioners from Nowra, who gave their assistance to the Medical Officer, Dr. K. Georgs. Of the 241 patients under treatment, 65 contributed towards their maintenance. The total amount collected for fees and medicine was £248 2s. 4d.

The Lady Edeline Hospital for Babies.

The Annual Report of the Lady Edeline Hospital for Babies at Vaucluse covers a period of 13 months, in order to enable the following report to start on January 1, 1916. The administration of the Hospital appears to be entrusted to a committee of ladies, who hold regular meetings each month. Two members of this committee are required to visit the institution and to report to the full committee any matters needing attention. Complaints are made that the little patients are frequently sent into the Hospital too late for treatment to have any effect. During the course of the 13 months, 288 patients were admitted. Of these, 47 were under three months of age, 105 were under six months, 112 were under two years, and 24 were over two years. The total number of deaths was 71, including 11 infants under three months, 29 under six months, and 30 under two years. There were 204 cases of gastro-enteritis. In 19 cases the patient was still in hospital at the end of the year. The number of deaths was 47, and, consequently, the case mortality was 25.4%. The Matron expresses the view that the result of the institutional care was very encouraging. She bases this opinion on the fact that many children who were admitted in a desperate condition, recovered completely; on the other hand, this very high mortality rate must be regarded as evidence of a want of machinery for the adequate care of infants. The experience in various parts of the world of those who have devoted themselves to the study of the health of infants, teaches that it is possible to reduce the incidence and mortality of gastro-enteritis to a low figure. The Matron points out that the mothers are advised to take their babies to the Baby Clinics. It would seem as if something more than advice were needed.

Marasmus called for treatment on 29 occasions. In two patients it was complicated by pneumonia. Of the 27 cases in which the diagnosis of uncomplicated marasmus was made, 10 ended fatally. The mortality was therefore 37.2%. There were in all 23 cases of pneumonia, including those complicating measles. Of the 23 patients, nine, or 31.1% died.

It is stated that when a patient is being breast fed at the time of admission, the mother is also admitted to the Hospital. It appears that the average number of cots occupied was 29, and the average of beds occupied by mothers was six.

Strickland Convalescent Home for Women.

The Strickland Convalescent Home for Women at Rose Bay was officially opened on March 16, 1915. A few patients were admitted prior to the official opening. The total number of persons accommodated during the year was 444. This Home contains 30 beds and four cots. Women, after discharge from general hospitals and maternity hospitals, are admitted for a period of rest. A short time after admission they are required to make their beds and to assist in keeping their rooms clean and tidy, provided that their bodily condition permitted of this. It is not stated how long each patient was kept in the Home. As there were 444 patients and 30 beds and four cots available, the average length of stay would work out at four weeks if the Home were full throughout the year.

Convalescent Home for Men.

At the Convalescent Home for Men at Eastwood 259 persons were admitted and 244 were discharged. The majority of these persons were convalescing after acute illness. A few were suffering from chronic and incurable diseases. The average number of patients in the Home was 16.2, and the average length of stay was four weeks.

Rookwood State Hospital and Asylum for Men.

The Rookwood State Hospital and Asylum for Men, which is situated at Lidcombe, comprises 13 hospital divisions, with accommodation for 678 patients, and the Asylum proper, which has beds for 743 persons. At the beginning of the year there were 1,328 inmates, and at the end of the year 1,321. During the 12 months 3,591 persons were admitted, 3,067 were discharged, and 531 died. The total number of

patients in the hospital divisions was 3,216. The bacteriological and other laboratory work was conducted by the staff of the Microbiological Department, while the radiological work was undertaken at the Sydney Hospital. During the course of the year 249 major operations, 150 minor operations, 60 ophthalmic operations and 52 operations on the throat, ear and nose were performed. A considerable amount of work was carried out in the Dermatological Department, in the Dental Department and in the Massage Department. Two wards have been set aside for the treatment of epilepsy and mental disease. As soon as the mental condition of a patient calls for certification, the patient is transferred to one of the hospitals for the insane. The wards are under the care of a Resident Medical Superintendent and a Junior Medical Officer, while the visiting staff of surgeons and physicians undertake the specialistic work. Five members of the honorary medical staff, nine attendants, one nurse and one clerk were absent on military duty during the year. The remaining members of the staff were consequently required to perform a larger amount of work than usual.

State Hospital and Asylum for Men, Liverpool.

The number of patients admitted to the State Hospital and Asylum for Men, Liverpool, during the year 1915 was 1,426. There were 590 inmates on the first day of the year. The number of persons discharged was 1,276, while 181 persons died. The average age of the deceased persons was 66.28 years. The average cost per head was £27.

In the Lock Division no less than 264 patients were admitted during the year. There were 31 patients in the wards on January 1 and 21 on December 31, 1915. There were no deaths. The number of patients in this Division increased materially during the early part of the year, and for a time it was necessary to absorb a small ward to accommodate them.

In the Cancer Division there was also considerable congestion. The number of patients admitted was 153, and the number discharged during the year 54. The disease terminated fatally in 53 cases.

The Senior Medical Superintendent also complained of the overcrowding in the general wards.

During the course of the year the post of Junior Medical Officer, which had previously been vacant, was filled by the appointment of Dr. McLennan. For a period of four months a considerable amount of surgery was undertaken. At the end of July, however, the Senior Medical Superintendent, Dr. Beattie, was taken seriously ill. It was therefore necessary from that time onwards to transfer patients requiring operative treatment to the State Hospital at Lidcombe.

State Hospital and Asylum for Women, Newington.

During the year 1915, 1,300 persons were admitted to the State Hospital and Asylum for Women, Newington. There were, in addition, 732 inmates at the beginning of the year, making a total of 2,032. Of these, 1,146 were patients in the Hospital Division, including 829 who were admitted during the year. The number of those discharged from the Hospital was 823, and of those discharged from the Asylum 274. The total number of deaths was 186. In 75 instances death was ascribed to senility.

In the In-patient Division of the Hospital, the patients were treated for a large variety of diseases. A number of minor operations were considered essential, and were performed. Towards the end of the year it was determined that provision should be made for the reception of persons suffering from venereal diseases in an infectious stage. The arrangements for the reception of these patients, however, had not been completed by the end of the year. The total number of persons suffering from syphilis was 56, and from gonorrhœa was 6. There were 44 cases of cancer, of which 21 were fatal. In addition to the in-patients, 601 out-patients were accorded medical attendance. It is stated that trachoma was prevalent among the Asylum inmates.

Other Asylums.

Short reports are appended in connexion with the State Asylum for Aged and Infirm Men at Parramatta, with the State Asylum for the Blind and for Men Suffering from Defective Sight and Senility at Parramatta and with the Cot-

tage Homes for Aged Couples at Parramatta. There is little in the reports of significance from a medical point of view.

Medico-legal and Other Activities.

In his report dealing with the Hospital Admission Depot, Dr. A. A. Palmer gives a summary of the medico-legal and other activities of his Department. Post-mortem examinations were carried out of 219 bodies, at the request of the City Coroner. Evidence was given in this connexion on 56 occasions at the Coroner's Court and on seven at the Central Criminal Court. Medico-legal investigations were carried out 39 times in cases of alleged rape and indecent assault and 29 times in connexion with other criminal cases. Dr. Palmer records that all medico-legal cases are submitted to the Government Medical Officers before the assistance of the Government Analyst, the Staff of the Microbiological Laboratory, or the staff of other Government Departments is sought. He was also required to give evidence at the legal proceedings instituted for the purpose of checking false claims which had been made in connexion with certain proprietary preparations.

During the course of the year the Government Medical Officers examined 345 candidates for admission into the Police force and re-examined 113 probationers.

The average number of members of the Police force requiring medical attendance daily was 33. Periodic visits were paid to the Long Bay Penitentiary with the object of examining the mental condition of prisoners and for other purposes. They visited the Reception House at Darlinghurst daily, and during the course of the year certified 653 persons as insane.

A considerable amount of work was conducted in connexion with the examination of candidates for appointments to the public service. The meetings of the Miners' Accident Relief Board were attended and harbour and sea pilots were examined in the Navigation Department. In accordance with the provisions of the *Factories Act*, 3,296 persons were examined, largely for the purpose of granting age exemption certificates or permits to work at certain trades.

The Motor Ambulance Service is conducted from the Hospital Admission Depot, and a very considerable amount of work was carried out during the year. Nearly 3,000 patients were removed by motor ambulances. In the last place, the Disinfection and Fumigation Station at Woolloomooloo Bay was utilized in connexion with the Hospital Admission Depot.

The Government Bureau of Microbiology.

Appended to the report is a special report from the Microbiological Laboratory, covering close on 100 pages. It is divided into two parts, the first dealing with the routine work and the second with various researches.

During the course of the year 6,873 examinations for the detection of bacteria and protozoa were undertaken. The vast majority of these examinations were for the laboratory diagnosis of diphtheria, tuberculosis, syphilis and gonorrhoea. Bacteriological investigations in connexion with 133 cases of meningitis and 119 of septic conditions were carried out. In addition, four samples of milk and 74 samples of other materials were subjected to a microbiological examination. The total number of pathological investigations was 554, including five specimens of animal tissues. In the third place, 499 ecto- and endo-parasites were identified. Material was examined for medico-legal purposes, and a very large number of rats was also examined. A certain amount of work was also conducted for the Department of Defence. Two and a half pages are devoted to an enumeration of the culture media prepared and issued, the bacteriological materials issued and the vaccines prepared and issued.

A special report by Drs. J. B. Cleland and E. W. Ferguson on the plague investigations reveals that no infected rat or flea was discovered. The ecto-parasites on the rats were identified and classified.

The second investigation deals with enteric fever. A record is published of the results of the tests for agglutination applied to the samples of blood submitted.

A detailed report is given of the routine work involved in the laboratory diagnosis of diphtheria.

There is a special chapter devoted to the examination of the mucus from the throats of the boys on the training ship

Tingara. A description is also given of pure cultures isolated from 15 patients.

The fourth chapter contains a summary of the work done in the examination of sputum, urine, butter and milk for tubercle bacilli. The fifth chapter contains a record of a post-mortem examination on a Chinaman who was suffering from leprosy. The sixth chapter contains some information concerning the meningococci gained from patients suffering from epidemic cerebro-spinal meningitis. The seventh chapter includes the results of the Wassermann tests which were applied to 625 specimens of blood and three of cerebro-spinal fluid. A positive reaction was obtained in 215 cases and a partial reaction in 33. The eighth chapter deals with vaccines and has appended to it a table setting forth a mass of details.

In the second division Dr. Cleland gives a full description of the microscopical appearances of pathological specimens submitted for examination, together with some clinical data and a number of full-page photo-micrograms. The third division has apparently been omitted.

The fourth division represents a record of the parasites collected or received during the year. The account is limited to the identification of the parasites and the situations in which they were found. While the study of the biology and bio-chemistry of these insects and other parasites might lead to the acquisition of extended knowledge of parasitic diseases of man and animals, it is difficult to discern the connexion between these records and public health.

Under the heading "General," Dr. J. B. Cleland publishes an article entitled "Contributions to the History of Diseases in Man in Australia." The first disease dealt with is hydatid disease. Dr. Cleland reproduces summaries of case records which have appeared in various journals from the year 1887 to the year 1899. No attempt has been made to collate the information contained in these case records. The second subject dealt with is headed "Injuries and Diseases of Man in Australia attributable to Animals, except those due to Snakes and Insects." In this article he uses published records and some private communications. Descriptions are given of injuries in man caused by man, birds, lizards, fishes, molluscs, sea-crabs, centipedes, mites, ticks, spiders, scorpions, etc. The third part is devoted to diseases of the skin. A brief record is given of the published cases of ringworm of the face and scalp, of pediculosis and of infective conditions of bacterial or unknown origin. Other abstracts deal with eczematous conditions, scleroderma, keloid, the effects of sunlight and climatic exposure, etc.

In the last section, Dr. Cleland reproduces some of the records dealing with scurvy.

The Metropolitan and Combined Sanitary District.

The Acting Medical Officer of Health for the Metropolitan and Combined Districts of Sydney, Dr. F. M. Suckling, issues a full report which covers 15 foolscap pages. The following is a brief summary of some of its contents. There were, in the course of the year 1915, 4,190 cases of scarlet fever in the metropolis. The incidence rate was 5.53 per 1,000 of population, while the death-rate was 0.07 per 1,000 of population. The case mortality was 1.14%. The disease was apparently more prevalent than usual. A high incidence was spread over the period from 1902 to 1908, while from 1910 to 1913 the incidence was very low. In 1914 it was 2.32 per 1,000 of population. The case mortality was about the average in 1902; in 1910 and in 1913 it was relatively high.

There were 2,295 cases of diphtheria during the year. This represents a case incidence of 3.03 per 1,000 of population. The incidence was low in the period 1899 to 1902. During the following seven years it gradually rose, and since 1910 has remained at about the same level. The case mortality was 4.13%. Since 1908 the lowest recorded mortality was 2.89%, in 1910, and the highest 14.82%, in 1901.

There were 746 cases of enteric fever, which represents a case incidence of 0.98 per 1,000 of population. Since 1904 the case incidence has varied between 0.76 and 1.33. The case mortality in 1915 was 9.91%. In 1914 it was 13.31%. Since 1899 the range was between 9.62% and 13.31%. Details are given concerning an outbreak which embraced 78 cases. It was traced to a dairy at which a person resided who was a bacillus carrier. Every member of the family of the pro-

prior contracted the disease except two, who had undergone anti-typhoid inoculation a short time before.

During the course of the year 658 cases of pulmonary tuberculosis were notified in the metropolis. This disease has been notifiable since 1903. During the first ten years between 458 and 589 cases were notified each year. In 1913 there were 621 cases and in 1914 601. Dr. Suckling states that the notification has been attended by most beneficial results. He, unfortunately, does not give any data in support of this statement.

The number of cases of anterior poliomyelitis notified in 1915 was 48. In 1914 there were 63 cases. This disease has been notifiable since 1912. There is always a considerable doubt whether the number of cases notified of a disease of this nature corresponds, even approximately, to the actual number of cases. It is well known that a considerable proportion of the mild cases end in recovery without any medical intervention, and consequently these cases are not notified. It is probable that the true nature of the infection in some mild cases is not recognized by medical practitioners and also that some practitioners neglect to notify cases which reveal themselves as undoubted instances of the disease.

The total number of cases of malaria reported in the metropolis was 47. The disease was rendered notifiable on March 17, 1916.

Dr. Suckling gives information concerning the incidence of epidemic cerebro-spinal meningitis, which became a notifiable disease on October 11, 1915. He states that the epidemic broke out in July, at the Liverpool Military Camp, and spread to some extent to the civil population. The total number of cases notified between October 11 and December 31 was 25. He calls attention to the fact that no less than 43 deaths attributed to this disease, were notified in the metropolitan area. He deals briefly with the epidemiology of the condition, and advocates isolation of the patient and disinfection of the discharges as preventive measures. He would also isolate contacts until it could be ascertained whether or not they were harbouring the meningococcus.

A special section of the report is devoted to the subject of infantile mortality. In the first place he shows that there has been a gradual decrease from 192 per 1,000 births, in 1880, to 68, in 1914, and 72, in 1915. He sets out in tabular form the various alleged causes of death of children under the age of 12 months, during the six years 1910 to 1915. During this period there has been no material reduction in the general infantile mortality in the metropolis. Diarrhoeal diseases caused 442 deaths in 1915. This number is larger than the number recorded in 1910 and 1911 and smaller than that recorded in 1912, 1913 and 1914. In regard to the deaths ascribed to prematurity, a distinct increase in number has been noted. It should, however, be remembered that prematurity may depend on a variety of causes, many of which are but imperfectly understood at the present moment. In a similar manner, the frequency of deaths from so-called developmental diseases has apparently increased during the six years. He defines developmental diseases as injury at birth, debility at birth, atelectasis, congenital defect, atrophy, marasmus and dentition. Until further information is available concerning the deaths entered under the headings debility at birth, congenital defects, marasmus and dentition, it will be impossible to ascertain the significance of these figures or to apply any measures for their reduction. The fourth most common group of fatal disease also show an increase. There were 125 deaths from pneumonia in 1915, as compared with 94 in 1910, 79 in 1911 and 65 in 1912.

A short paragraph is devoted to the development of the baby clinics. At the beginning of the year the Minister of Health took steps to establish baby clinics, and in consequence the visiting of infants in the metropolis previously undertaken by members of the City Council staff and by ladies employed by the Department of Public Health, was discontinued. The Baby Clinics' Pre-maternity and Home Nursing Board absorbed the Rawson School for Mothers and its clinics. Including the latter, the Board had under its direction eight baby clinics. It will be remembered that the *Notification of Births Act*, 1915, was placed on the statute book for the purpose of facilitating the work of these clinics.

Dr Suckling gives a brief summary of the sanitary work conducted under his supervision during the year. He also

appends a short reference to the chief changes in the public health administration.

Hunter River Combined Sanitary District.

Dr. J. Booth-Clarkson has claimed 23 pages of the publication for his annual report as Acting Medical Officer of Health for the Hunter River Combined Sanitary District. He refers to the outbreak of small-pox as having interfered with the general work of his staff to a considerable extent. The work of inspecting buildings appears to have suffered considerably, and Dr. Booth-Clarkson appears to have had much difficulty with the organization of his office. He states that the officials were frequently called on to deal with minor sanitary matters and that other work has in consequence suffered. Scant information is vouchsafed concerning the control of garbage depôts, unhealthy building sites, nuisances, and hospitals. Under the heading of disinfection he fails to record the work conducted by his staff, and contents himself by stating that the local authorities' Inspector is expected to visit and disinfect premises after the removal or convalescence of persons who have suffered from scarlet fever, diphtheria, or enteric fever.

He gives a short summary of the reports on the work undertaken by the various local health authorities throughout the district.

In regard to the notification of infective diseases, he points out that there were 233 cases of diphtheria, which represents a considerable increase on the number recorded in the preceding years. Of these 233 patients, 43 were attending public schools, and six were living in dairies. He failed to obtain any evidence which would justify the assumption that the spread of the disease was effected through the medium of the milk. As already mentioned, he refers to the means he adopted in 1913 in the Mackay district, North Queensland, to trace the sources of the infection in an outbreak of diphtheria. Apparently no systematized endeavour to carry out a similar campaign was undertaken in the Hunter River Combined District. The case mortality was 5.6%.

There were 390 cases of scarlet fever. There were no deaths. He fails to find a satisfactory explanation why scarlet fever has become prevalent during the years 1914, 1915.

The total number of cases of enteric fever was 105, of which 13 were fatal. The case mortality was therefore 12.4%. It appears that enteric fever was more prevalent in the preceding five years than in 1915. Dr. Booth-Clarkson points out that in parts of East Maitland very unsatisfactory hygienic conditions obtain, and that in these circumstances he was of opinion that the ordinary instructions for dealing with the matter would not be satisfactory. He therefore recommended that antityphoid depôts should be opened, and a number of persons were inoculated. No further cases appeared in that district. Six persons were inoculated in Morisset. He discusses the danger which might arise if too much reliance were placed on the result of the Widal test and concludes that a negative test in the presence of clinical symptoms indicating enteric fever should not interfere with the application of preventive measures.

In dealing with the outbreak of variola, he records the fact that there were 400 cases in 1915. There were no deaths. He gives a short history of the small-pox outbreak, and discusses the general administration as applied in the Hunter River District.

There were 10 cases of malaria notified during the year, but none of epidemic cerebro-spinal meningitis, plague or infantile paralysis. Tuberculosis was rendered notifiable during the course of the year, and in the months of November and December 11 cases were notified. The total number of deaths in 1915 from pulmonary tuberculosis was 54, and from other forms of tuberculosis nine. The notification is carried out by the practitioners of the district, who are asked to state whether they wish the officers of the Department to visit the patient or not. When a visit is required, a nurse-inspector carries this out and gives full instruction. The patient is required to notify the office when he changes his address. Disinfection of premises takes place after removal or death of the patient.

A Baby Clinic was opened in Newcastle and the *Notification of Births Act*, 1915, was applied in various parts of the district. The remainder of the report deals with the causes of death of adults and of infants, the supervision of dairies and noxious trades, the prosecutions undertaken by the local authorities for the breaches of the *Public Health Act* or its regulations, and the administration of the *Pure Food Act*.

PUBLIC HEALTH IN TASMANIA.

The Chief Health Officer of Tasmania, Dr. C. L. Park, has presented to the Chief Secretary the annual report of the Department of Public Health for the year ending June 30, 1917. He points out that he is unable to review the departmental operations for the whole year from personal observation, as he did not assume the position of Chief Health Officer until April 18, 1917. He has reported on the work performed by the Department during the first nine months of the period, from information supplied by the Secretary. During this time Dr. A. H. Clarke was Acting Chief Health Officer. The staff of the Department, which serves a population of 199,337 persons, scattered over an area of 26,000 square miles, about equal to that of Scotland, consists of the Chief Health Officer, a part-time Acting Bacteriologist, three inspectors, a secretary and two female clerks. Four medical practitioners give their services as part-time Commonwealth Quarantine Officers, two in Hobart, one in Launceston, and one at Beauty Point. The local authorities appoint a medical officer of health and a sanitary inspector, on whom devolves the main responsibility in connexion with public hygiene. The position of Assistant Health Officer is vacant, though applications were invited in September, 1916, and in June, 1917. As the applicant was required to possess a knowledge of bacteriological work, the post could not be filled, no persons with this qualification seeking the position. During the year the Department spent £3,053, including £1,571 on salaries and travelling expenses, £467 in connexion with the outbreak of cerebro-spinal fever, £95 for the treatment of contagious diseases, £124 upon postage and £794 under the *Public Health and other Acts*.

In February, 1917, the Legislature of Tasmania passed an Act dealing with the control of venereal diseases.¹ This Act provides for the compulsory notification and treatment of patients suffering from these diseases and prescribes severe penalties for breaches of its provisions. The Commonwealth Government offered to subsidize the Department of Health by providing means for the diagnosis and the treatment of persons suffering from venereal diseases upon certain conditions, to which the Government of Tasmania has agreed. Arrangements have been made with the Director of Quarantine for the Commonwealth to initiate this work, and regulations have been already gazetted. The Commonwealth authorities directed attention to the necessity for microscopical examinations and blood tests to establish the diagnosis and to regulate treatment. They considered it essential that the services of a full-time bacteriologist should be at the disposal of the Department. On the results of the bacteriological examinations will depend the administration of treatment, the issue of certificates of cure and of freedom from disease and the recognition of the presence of disease involving prolonged treatment, partial isolation and continual inspection. So far-reaching are the results of a positive diagnosis that Dr. Park is of opinion that any possibility of error should be removed from the bacteriological diagnosis.

The Department is asking Parliament to amend the *Public Health and the Food and Drugs Acts* to admit of better administration of these measures. The principal amendment sought in the *Public Health Act*, is the deletion of the word "dangerous" in the clause giving power to the Governor to make regulations on the recommendation of the Chief Health Officer for the purpose of preventing or checking the spread of any dangerous infective disease. The diseases, at present regarded as dangerous within the meaning of the Act, are typhus fever, small-pox, cerebro-spinal meningitis, bubonic plague and cholera. The effect of this amendment would be to allow regulations to be framed to prevent and

check the spread of any infectious disease. Such regulations would provide for house-to-house visitation with inspection of the houses and their occupants as well as of yards and sewerage; for the cleansing and disinfection of dwellings; for the ventilation of buildings, houses and rooms; for the registration of hotels and boarding-houses and for the regulation of the number of lodgers to be accommodated; for the isolation and disinfection of persons, places and things; for the provision of medical aid and accommodation for the sick; for the removal and curative treatment of the sick and for the removal and detention of other persons; for the speedy burial of the dead; for the destruction of insanitary buildings; for the control of ships from infected ports, including the care of the cargo during its discharge, of the bilge-water, of the drinking-water and of the ballast, and for the management and control of hospitals for those suffering from infectious diseases or living in isolation. Another amendment is designed to give the Department power to control carriers and those who have been in contact with infectious diseases. An amendment to the *Food and Drugs Act* provides for the appointment of a *Food Standard Committee*. The Department also hopes to administer the *Places of Public Entertainments Bill*, which has for its object the consolidation and amendment of the law relating to the licensing and regulating of places for public entertainment. The Act will give power to the Chief Health Officer or to the local authority in matters of ventilation, drainage, ingress and egress, appliances for the extinction of fire and number of persons to be admitted.

In connexion with local administration, the Chief Health Officer has arranged for a course of lectures and demonstrations to be conducted in Hobart with the object of affording country sanitary inspectors an opportunity of gaining knowledge and experience. It is hoped that no local authority will place any obstacle in the way of their officer attending the meeting and acquiring information which will enable him to deal more effectually with the matters entrusted to his care. Some remarks are offered about the disposal of night-soil and garbage. Flies readily breed in household refuse and often carry the virus of infectious disease. The practice adopted in the city of Hobart in disposing of garbage, is held to be "open to grave objection," and the hope is expressed that the installation of an approved incinerator at an early date will remove the nuisance.

In addition to the diseases enumerated above as dangerous infective diseases, enteric fever, scarlatina, diphtheria, puerperal fever, leprosy, tuberculosis (lung and throat), *ophthalmia neonatorum*, and infantile paralysis are notifiable under the *Public Health Act*, 1903. Dr. Park is of opinion that isolation of the first cases that develop is the most effective community method of preventing the dissemination of infectious diseases, and he suggests that the provision of isolation accommodation at public hospitals would cut short the spread of these diseases, would result directly in saving to particular districts and would benefit indirectly the health of the whole State. During the twelve months, 1,371 cases of infectious diseases were notified. Of these cases, 850 were of diphtheria, 243 of phthisis, 119 of typhoid fever, 67 of cerebro-spinal meningitis, 63 of scarlet fever, 18 of puerperal fever, 8 of *ophthalmia neonatorum*, and 3 of infantile paralysis. More than half of the patients suffering from notifiable infectious diseases have been ill with diphtheria. The number of cases notified, however, is 138 less than in the previous year. The chief reason assigned for the lowered incidence of this disease, is the practice of not allowing children, suffering from diphtheria, to return to school unless two consecutive negative results are obtained from swabs submitted to bacteriological examination. It has, however, been pointed out in *The Medical Journal of Australia*² that the incidence of diphtheria in Tasmania is less than anywhere else in the Commonwealth, while the case-mortality is double that of the larger States. From these facts the inference has been drawn that many cases of diphtheria of a mild kind are not notified in Tasmania. The report of the Acting-Bacteriologist shows that 1,099 swabs were examined for diphtheria, and that, out of total of 1,361 specimens submitted for examination, 1,002 came from Hobart, 228 from

¹ For the text of this Act see *The Medical Journal of Australia*, Vol. I., p. 365, 1917.

² *The Medical Journal of Australia*, Vol. II., p. 461, 1917.

country districts and 31 only from Launceston. It is probable that examinations made at the Launceston Hospital are not recorded in this report. A proposal appears in the report to increase the scope of the Department's activities in respect to diphtheria, when the full-time bacteriologist is appointed.

The Chief Health Officer draws attention to the fact that, in May, 1917, he brought the matter of the infantile mortality under the notice of the Chief Secretary and that he made certain suggestions designed to reduce the infantile death-rate. The infantile mortality rate in Tasmania is 72.37 per 1,000, the highest rate for any State in the Commonwealth, despite the relative absence of congested areas and the advantage of the climate in respect to temperature. Statistics show also that Tasmania has the highest birth-rate and almost the lowest death-rate of any of the Australian States. The infantile death-rate in Hobart is 85 per 1,000 births and in Launceston 83 per 1,000 births. A rate of 50 per 1,000 births may be unavoidable but the higher rates can be reduced. In this connexion it may be recalled that "a high infant death-rate implies, in general, a high death-rate in the next four years of life." Dr. Park considers that improper feeding, due partly to ignorance and partly to the necessity for supplying an artificial substitute for human milk, is the most noticeable cause of this high infant mortality. He proposes to instruct the mothers by means of the visits of properly trained nurses to the homes. He also recommends the establishment of infant clinics, where expectant mothers can receive advice and help, where mothers may bring their babies to be weighed and where medical aid can be obtained, if needed. He believes that a pure milk supply is a necessary corollary to the clinics.

The number of midwives whose names appeared on the register kept under the Midwives Act, 1911, upon June 30, 1916, was 611, of whom only 266 applied for their annual certificate for the year. Inquiries were made through the medium of the police to explain the lessened number. It was found that 17 were dead, that 36 had left the State and that 70 were no longer in practice. Dr. Park thinks that the Midwives Act, 1911, should be amended to provide for a minimal period of 12 months' special training in midwifery combined with practical instruction in the elements of general nursing.

A number of reports are added as appendices. The Chief Inspector deals with the work of his staff. Dr. T. C. Butler, Acting Bacteriologist, reports on 1,261 specimens examined in his laboratory. He tested 1,099 swabs for diphtheria, stained 47 sputa for tubercle bacilli, tested 113 swabs and fluids for meningococci and examined one smear for gonococci and one blood for a typhoid reaction. The Government analyst, Mr. W. F. Ward, examined 460 samples of foods and drugs. Out of 114 samples of milk tested, 15 were found below the standard. Eight out of 18 samples of condensed milk were wrongly labelled, so that when the milks were diluted as directed, a mixture was obtained with a lower percentage of constituents than standard milk. Two out of three specimens of baking powder yielded an insufficient amount of gas. Seven out of 11 samples of tea were distinctly inferior to the standard. A number of samples of aspirin tablets labelled as containing 5 grains, were found to contain less, the lowest being 4 grains. These results are similar to those obtained throughout Australia, where more than 10% of all samples tested, excluding milk, are found below the standards. Some statistical information is added in another appendix.

Special Correspondence.

(By our Special Correspondent.)

CANADA LETTER.

The Halifax Disaster.

It is not possible to give an adequate description of the terrible disaster which overwhelmed the city of Halifax, with its beautiful harbour, on the morning of December 6, 1917. In the city all was as usual—people were just going to business, the children were assembling in the schools, and the loiterers were still at the breakfast table as the *Mont Blanc*, laden with munitions and carrying large quantities of trinitrotoluene and other explosives, proceeded on her way through the narrows into Halifax Harbour. A Bel-

gian relief ship, the *Imo*, was coming the other way. There was a confusion of signals; in a vain effort to avoid the other ship the *Mont Blanc* altered her course, but the *Imo* crashed right into her side. The explosion was not immediate, and the crew of the *Mont Blanc* had time to get away. When it did come, however, its effects were indescribable. Every building over an area of two square miles was shattered, and the town of Dartmouth was completely ruined. People were buried beneath the ruins of the buildings, those in the streets were thrown to the ground; every pane of glass in the city was smashed to pieces and bits of glass were sent in all directions, inflicting many injuries and blinding numbers of persons. The explosion was immediately followed by fires which threatened to complete the destruction of the entire city. Then came a terrific blizzard with icy wind, hail, heavy snow, and finally rain which immediately froze. Every effort was made to rescue those who were pinned beneath the fallen debris, but many were burnt to death; then, when the fires were fairly well extinguished, the extreme cold and the blizzard made it impossible to proceed with the work of rescue. The property loss is estimated at twenty million dollars, and, though reliable figures are not yet available, it is thought that the injured number about 3,000, those who were killed about 1,250; those totally or partially blinded about 350 or even 500. Numbers of children who had just assembled in the schools were buried under the buildings, and at Dalhousie University, without warning and with a terrific roar, every window in the medical building was blown in and in the laboratories the ceilings fell in. The confusion that followed all this can be imagined. The doctors' offices were besieged with people, and it was most difficult to attend to the wounded. In the hospitals hundreds of wounded arrived every hour, some of them with as many as 20 distinct wounds, many of them of the scalp and eyes. Fortunately, many of these, though severe, cleared up quickly under treatment. Some of the wounds became septic and three cases of gangrene occurred. There was one case of incipient tetanus, but it cleared up after the free injection of anti-tetanic serum.

The medical history of the catastrophe is to be written by Professor D. Fraser Harris, of the Chair of Physiology in Dalhousie University, who is preparing a full report.

Promptly upon the receipt of news of the disaster, assistance was sent to the stricken city from the United States and from other cities in Canada, and splendid work has been done by the American and Canadian Red Cross, and by nurses of the Canadian Army Medical Corps and V.A.D. nurses. The chaos following the explosion was quickly reduced to order by Colonel McKelvie Bell, A.D.M.S., of the military district in which Halifax lies, who took immediate command of the situation, and by his prompt and efficient action saved much suffering.

Federal Action re Prohibition.

Practically the whole of Canada is now under prohibition, but it has been impossible to make the measure effective when it was possible to import intoxicants from the United States or from one province to another. One of the first measures taken by Sir Robert Borden, therefore, upon the return of the present Government, was to prohibit by Order-in-Council, the importation into the Dominion, or from one province to another, of any intoxicating liquor.

Correspondence.

TO FURTHER RECRUITING.

Sir,—“Your Correspondent” is somewhat discourteous in his reply to my letter *re* “To Further Recruiting.” I am no militarist, and have every admiration for the medical man who, being unable to proceed on active service through disability of age or health, is yet giving service on this side. I am the last to malign such an one with the terms “Your Correspondent” assumes I would use. The man I speak of is the medical military officer who can go overseas and relieve men who have been out, in some cases since the beginning of the war. “Your Correspondent” must surely be aware that there are medical men in Australia fit and capable of relieving those on the other side who do not and will not volunteer for active service abroad, although holding “home service” appointments. The call of patriotism influenced

those abroad, the call of the pocket influences these here. It will take more than a badge issued by the Minister of Defence, even if worn by medical "reservists," to move these hard-working practitioners from their lucrative practices, which now consist of the income of pre-war times, plus a proportion of the incomes of men who are overseas, plus military pay.

Yours, etc.,

CARL DYRING.

"Liston House," 63 Collins Street, Melbourne,
February 25, 1918.

VOLUNTARY ENLISTMENT.

Sir,—I notice in the last issue of the *Medical Journal* some remarks by Dr. Hornabrook on the failure of a number of medical men to do their duty to their country in this hour of crisis.

To me, however, the question appears to be, "Is the profession doing all it can to release men fit for active service?"

Take my own case for instance. At the beginning of the war I was regarded as unfit, but I do not think there can be any grounds for that belief now. Accordingly, I have been trying to sell my practice or secure a locum for the past nine months, but without success. There is no other doctor in the district, so what am I to do?

Since conscription has been rejected, it is surely possible for the B.M.A. to make arrangements, whereby an unmarried man like myself can be freed, in order to do his "bit" for our grand old Empire.—Yours, etc.,

"A WILLING VOLUNTEER."

Tasmania, February 25, 1918.

Medical Appointments.

Under the provisions of *The Insane Persons' Hospital Amendment Act, 1885*, Dr. A. Dunsmuir (B.M.A.) has been appointed an Official Visitor of the Mental Diseases Hospital, New Norfolk, Tasmania, for the year 1918, Dr. C. L. Park (B.M.A.) having resigned.

The appointment of Dr. A. H. Macmorran as Acting Quarantine Officer, Port Hedland, Western Australia, during the absence of Dr. Browne, has been approved.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xv.

Royal Alexandra Hospital for Children, Camperdown, Chief Resident Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other contract practice. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Medical Officers to the Selwyn Hospital, North Queensland. Brisbane United Friendly Society Institute. Cloncurry Hospital.

Branch.	APPOINTMENTS.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide. Contract Practice, Appointments at Renmark.
WESTERN AUSTRALIA. (Hon. Sec., Health Department, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marriekville United F.S. Dispensary. N.S.W. Ambulance and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phoenix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Parramatta, Auburn and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
TASMANIA. (Hon. Sec., Belgrave, Tasmania.)	Medical Officers in all State-aided Hospitals in Tasmania.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, N.Z.

Diary for the Month.

- Mar. 12.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Mar. 12.—Tas. Branch, B.M.A., Council and Branch.
Mar. 14.—Vic. Branch, B.M.A., Council.
Mar. 19.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
Mar. 20.—W. Aust. Branch, B.M.A.
Mar. 20.—South Sydney Med. Assoc. (N.S.W.).
Mar. 20.—Western Suburbs Med. Assoc. (N.S.W.).
Mar. 21.—N.S.W. Branch, B.M.A., Return of Ballot Papers for Election of Branch Council.
Mar. 22.—Q. Branch B.M.A. Council.
Mar. 22.—N.S.W. Branch, B.M.A., Annual Meeting.
Mar. 26.—N.S.W. Branch, B.M.A., Council.
Mar. 27.—Vic. Branch, B.M.A., Council.
Apr. 2.—N.S.W. Branch, B.M.A., Council (Quarterly).
Apr. 5.—Q. Branch, B.M.A.
Apr. 9.—N.S.W. Branch, B.M.A., Ethics Committee.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.